# ANNUAL SYNAR REPORT

## 42 U.S.C. 300x-26

OMB № 0930-0222

# FFY 2016

# State: Pennsylvania

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# INTRODUCTION

The Annual Synar Report (ASR) format provides the means for states to comply with the reporting provisions of the Public Health Service Act (42 U.S.C. 300x-26) and the Tobacco Regulation for the Substance Abuse Prevention and Treatment Block Grant (SABG) (45 C.F.R. 96.130 (e)).

**How the Synar report helps the Center for Substance Abuse Prevention**

In accordance with the tobacco regulations, states are required to provide detailed information on progress made in enforcing youth tobacco access laws (FFY 2015 Compliance Progress) and future plans to ensure compliance with the Synar requirements to reduce youth tobacco access rates (FFY 2016 Intended Use Plan). These data are required by 42 U.S.C. 300x-26 and will be used by the Secretary to evaluate state compliance with the statute. Part of the mission of the Center for Substance Abuse Prevention (CSAP) is to assist states[1] by supporting Synar activities and providing technical assistance helpful in determining the type of enforcement measures and control strategies that are most effective. This information is helpful to CSAP in improving technical assistance resources and expertise on enforcement efforts and tobacco control program support activities, including state Synar program support services, through an enhanced technical assistance program involving conferences and workshops, development of training materials and guidance documents, and onsite technical assistance consultation.

**How the Synar report can help states**

The information gathered for the Synar report can help states describe and analyze sub-state needs for program enhancements. These data can also be used to report to the state legislature and other state and local organizations on progress made to date in enforcing youth tobacco access laws when aggregated statistical data from state Synar reports can demonstrate to the Secretary the national progress in reducing youth tobacco access problems. This information will also provide Congress with a better understanding of state progress in implementing Synar, including state difficulties and successes in enforcing retailer compliance with youth tobacco access laws.

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[1]The term "state" is used to refer to all the states and territories required to comply with Synar as part of the Substance Abuse Prevention and Treatment Block Grant Program requirements (42 U.S.C. 300x-64 and 45 C.F.R. 96.121).

# FFY 2016: FUNDING AGREEMENTS/CERTIFICATIONS

The following form must be signed by the Chief Executive Officer or an authorized designee and submitted with this application. Documentation authorizing a designee must be attached to the application.

| PUBLIC HEALTH SERVICES ACT AND SYNAR AMENDMENT |
|---|
| 42 U.S.C. 300x-26 requires each state to submit an annual report of its progress in meeting the requirements of the Synar Amendment and its implementing regulation (45 C.F.R. 96.130) to the Secretary of the Department of Health and Human Services. By signing below, the chief executive officer (or an authorized designee) of the applicant organization certifies that the state has complied with these reporting requirements and the certifications as set forth below. |
| **SYNAR SURVEY SAMPLING METHODOLOGY** |
| The state certifies that the Synar survey sampling methodology on file with the Center for Substance Abuse Prevention and submitted with the Annual Synar Report for FFY 2016 is up-to-date and approved by the Center for Substance Abuse Prevention. |
| **SYNAR SURVEY INSPECTION PROTOCOL** |
| The state certifies that the Synar Survey Inspection Protocol on file with the Center for Substance Abuse Prevention and submitted with the Annual Synar Report for FFY 2016 is up-to-date and approved by the Center for Substance Abuse Prevention. |
| **State: Pennsylvania** |
| **Name of Chief Executive Officer or Designee: Tom Wolf** |
| **Signature of CEO or Designee:** |
| **Title:** Governor　　　　　　　　　　　　　**Date Signed:** December 30, 2015 |
| **If signed by a designee, a copy of the designation must be attached.** |

# SECTION I: FFY 2015 (Compliance Progress)

## YOUTH ACCESS LAWS, ACTIVITIES, AND ENFORCEMENT

42 U.S.C. 300x-26 requires the states to report information regarding the sale/distribution of tobacco products to individuals under age 18.

1. **Please indicate any changes or additions to the state tobacco statute(s) relating to youth access since the last reporting year. If any changes were made to the state law(s) since the last reporting year, please attach a photocopy of the law to the hard copy of the ASR and also upload a copy of the state law to WebBGAS.** *(see 42 U.S.C. 300x-26).*

   a. **Has there been a change in the minimum sale age for tobacco products?**

   ☐ **Yes** ☒ **No**

   *If **Yes,** current minimum age:* ☐ 19 ☐ 20 ☐ 21

   b. **Have there been any changes in state law that impact the state's protocol for conducting *Synar inspections?***

   ☐ **Yes** ☒ **No**

   *If **Yes,** indicate change. (Check all that apply.)*
   ☐ Changed to require that law enforcement conduct inspections of tobacco outlets
   ☐ Changed to make it illegal for youth to possess, purchase or receive tobacco
   ☐ Changed to require ID to purchase tobacco
   ☐ Other change(s) *(Please describe.)* _____

   c. **Have there been any changes in state law that impact the following?**

   Licensing of tobacco vendors ☐ **Yes** ☒ **No**
   Penalties for sales to minors ☐ **Yes** ☒ **No**
   Vending machines ☐ **Yes** ☒ **No**

2. **Describe how the Annual Synar Report** *(see 45 C.F.R. 96.130(e))* **and the state Plan** *(see 42 U.S.C. 300x-51)* **were made public within the state prior to submission of the ASR.** *(Check all that apply.)*

   ☐ Placed on file for public review

   ☒ Posted on a state agency Web site *(Please provide exact Web address and the date when the FFY 2016 ASR was posted to this Web address.)*
   *http://www.ddap.pa.gov/Pages/Annual-Reports.aspx*

   ☐ Notice published in a newspaper or newsletter

   ☐ Public hearing

   ☐ Announced in a news release, a press conference, or discussed in a media interview

   ☐ Distributed for review as part of the SABG application process

   ☐ Distributed through the public library system

   ☐ Published in an annual register

   ☒ Other *(Please describe.)* <u>*Listserve announcing ASR availability on website.*</u>

3. **Identify the following agency or agencies** *(see 42 U.S.C. 300x-26 and 45 C.F.R. 96.130).*

    a. **The state agency (ies)** *designated by the Governor for oversight of the Synar requirements:*

    *The Pennsylvania Department of Health (DOH)*

    Has this changed since last year's Annual Synar Report?

    ☐ **Yes** ☒ **No**

    b. **The state agency(ies)** *responsible for conducting random, unannounced Synar inspections:*

    *The Pennsylvania Department of Health (DOH)*

    Has this changed since last year's Annual Synar Report?

    ☐ **Yes** ☒ **No**

    c. **The state agency(ies)** *responsible for enforcing youth tobacco access law(s):*

    *DOH Bureau of Health Promotion & Risk Reduction, Division of Tobacco Prevention & Control*

    Has this changed since last year's Annual Synar Report?

    ☐ **Yes** ☒ **No**

4. **Identify the following agencies and describe their relationship with the agency responsible for the oversight of the Synar requirements.**

    a. **Identify the state agency responsible for tobacco prevention activities (the agency that receives the Centers for Disease Control and Prevention's National Tobacco Control Program funding).**
    DOH Bureau of Health Promotion & Risk Reduction, Division of Tobacco Prevention & Control

    b. **Has the responsible agency changed since last year's Annual Synar Report?**
    ☐ **Yes** ☒ **No**

    c. **Describe the coordination and collaboration that occur between the agency responsible for tobacco prevention and the agency responsible for oversight of the Synar requirements.** *(Check all that apply.)* **The two agencies**

    ☒ Are the same
    ☐ Have a formal written memorandum of agreement
    ☐ Have an informal partnership
    ☐ Conduct joint planning activities
    ☐ Combine resources
    ☐ Have other collaborative arrangement(s) *(Please describe.)* _____

d. **Identify the state agency responsible for enforcing the youth access and advertising restrictions in the Family Smoking Prevention and Tobacco Control Act (the agency that is under contract to the Food and Drug Administration's Center for Tobacco Products (FDA/CTP)).**
DOH Bureau of Health Promotion & Risk Reduction, Division of Tobacco Prevention & Control

e. **Has the responsible agency changed since last year's Annual Synar Report?**
☐ **Yes** ☒ **No**

f. **Describe the coordination and collaboration that occur between the agency contracted with the FDA to enforce federal youth tobacco access laws and the agency responsible for oversight of the Synar requirements.** *(Check all that apply.)* **The two agencies:**
☒ Are the same
☐ Have a formal written memorandum of agreement
☐ Have an informal partnership
☐ Conduct joint planning activities
☐ Combine resources
☐ Have other collaborative arrangement(s) *(Please describe.)* ____

g. **Does the state use data from the FDA enforcement inspections for Synar survey reporting?**
☐ **Yes** ☒ **No**

5. **Please answer the following questions regarding the state's activities to enforce the state's youth access to tobacco law(s) in FFY 2015** *(see 42 U.S.C. 300x-26 and 45 C.F.R. 96.130(e)).*

a. **Which one of the following describes the enforcement of state youth access to tobacco laws carried out in your state?** *(Check one category only.)*

☐ Enforcement is conducted exclusively by local law enforcement agencies.
☐ Enforcement is conducted exclusively by state agency (ies).
☒ Enforcement is conducted by both local *and* state agencies.

**b.** **The following items concern penalties imposed for all violations of state youth access to tobacco laws by LOCAL AND/OR STATE LAW ENFORCEMENT AGENCIES (this does not include enforcement of federal youth tobacco access laws). Please fill in the number requested. If state law does not allow for an item, please mark "NA" (not applicable). If a response for an item is unknown, please mark "UNK." The chart must be filled in completely.**

| PENALTY | OWNERS | CLERKS | TOTAL |
|---|---|---|---|
| Number of <u>citations issued</u> | 17 | 0 | 17 |
| Number of <u>fines assessed</u> | 17 | 0 | 17 |
| Number of <u>permits/licenses suspended</u> | UNK | | UNK |
| Number of <u>permits/licenses revoked</u> | UNK | | UNK |
| Other *(Please describe.)* | NA | NA | NA |

**c.** **Which one of the following best describes the level of enforcement of state youth access to tobacco laws carried out in your state?** *(Check one category only.)*

☐ Enforcement is conducted only at those outlets randomly selected for the Synar survey.

☐ Enforcement is conducted only at a subset of outlets not randomly selected for the Synar survey.

☒ Enforcement is conducted at a combination of outlets randomly selected for the Synar survey and outlets not randomly selected for the Synar survey.

**d.** **Did every tobacco outlet in the state receive at least one compliance check that included enforcement of the state youth tobacco access law(s) in the last year?**

☐ **Yes**   ☒ **No**

**e.** **What additional activities are conducted in your state to support enforcement and compliance with state youth tobacco access law(s)?** *(Check all that apply.)*

☒ Merchant education and/or training
☐ Incentives for merchants who are in compliance (e.g., nonenforcement compliance checks in which compliant retailers are given positive reinforcement and noncompliant retailers are warned about youth access laws)
☒ Community education regarding youth access laws
☒ Media use to publicize compliance inspection results
☒ Community mobilization to increase support for retailer compliance with youth access laws
☒ Other activities *(Please list.)* *Young Lungs at Play; Multi-unit Housing Initiative*

*Briefly describe all checked activities:*

Merchant education remains on-going, along with community education and the publication of non-compliance offenders through media at the local level by the eight Tobacco Regional Primary Contractors (RPCs). Community mobilization also occurs at the regional level through the RPCs, with support from the Division of Tobacco Prevention and Control (DTPC).

The DTPC, through the RPCs, maintains local youth coalitions. Participants of these coalitions work on initiatives that educate the public about tobacco prevention and cessation.

The DTPC partnered with the Pennsylvania Alliance to Control Tobacco (PACT), Pennsylvania's statewide advocacy partner, to revamp a statewide youth coalition called Tobacco Resistance Unit, or TRU. TRU is a statewide movement aimed at helping youth ages 12-18 stay tobacco and nicotine free and prevent and stop youth tobacco use through education.

The Food and Drug Administration's website for their Tobacco Compliance contracts with states lists all outlets in which both Undercover Buy and Advertising and Labeling checks have been conducted. It also lists both successful check results, as well as those found to be in violation of the law. This website serves as a resource to the DTPC, RPCs, and the public.

DTPC has several initiatives that impact compliance with Pennsylvania's youth access law by implementing community based programs that change community norms through environmental approaches to promote healthy behaviors. Young Lungs at Play (YLAP) was adapted from successful initiatives in Rockland County, New York and Luzerne County, Pennsylvania. YLAP promotes establishment of tobacco-free parks and playgrounds. Participating communities and organizations receive signs in English and Spanish free of charge to display in tobacco-free areas. YLAP has reached disparate populations across Pennsylvania with considerable success rates in low income and African American areas as well as rural playgrounds and parks. Currently, there are over 769 YLAP programs in local boroughs, townships, municipalities, youth organizations and school districts including all recreational parks and playgrounds within the City of Pittsburgh. DTPC maintains an "Honor Roll" listing of YLAP sites on the Pennsylvania Department of Health (DOH) website and a Certificate of Recognition signed by the Secretary of Health is provided to all YLAP participants. Members of the DOH Executive staff have attended 10 local media events to recognize community-based efforts to create tobacco free outdoor parks and playgrounds. YLAP became the catalyst to expand the smoke free multi-unit housing initiative. YLAP is present in all 67 Pennsylvania counties, and minimal fiscal effort is required to recruit additional participants.

Smoke Free Multi-Unit Housing is another key initiative identified by DTPC. The DTPC developed and implemented a standardized statewide smoke free multi-unit housing policy initiative. The DTPC identified public housing as the initial focus of the initiative and at the county and regional levels to maximize impact through the eight RPCs. Strategies include: 1) identifying, educating and mobilizing key stakeholders, specifically those at city and county housing authorities; 2) conducting community education and raising public awareness around the dangers

of secondhand smoke in multi-unit housing settings; and 3) providing tobacco cessation resources and referrals to both staff and residents of multi-unit housing sites. To capture policy-focused activities and results, DTPC staff worked with the statewide external evaluator to develop standardized reporting tools. The primary tool is the Smoke Free Multi-Unit Housing Policy Initiative Tracking Sheet, which captures completed and ongoing policy work on a quarterly basis. Pennsylvania has 51 multi-unit housing organizations that have partnered with the RPCs to implement smoke free policies, and an estimated 25,000 youth and adults have been impacted by these policies and are protected from secondhand smoke as a result.

DTPC also implements programs to educate state leaders, decision-makers, and the public about the burden of tobacco use and evidence-based policy and other strategies to reduce this burden. Over 90% of tobacco company expenditures are spent on point of sale (POS) marketing in convenience stores, gas stations, pharmacies and other retail outlets. This POS marketing is very effective at reaching kids and influencing them to smoke. To counteract this practice, the Division of Nutrition and Physical Activity collaborated with the DTPC to provide technical assistance, assess program progress and develop and provide trainings and training materials to implement the Healthy Corner Store Initiative with RPCs, coalition member stakeholders and DOH staff. DTPC is expanding this effort through a Pennsylvania POS initiative by conducting the following activities: 1) identifying point of sale coordination opportunities by leveraging resources and utilizing tobacco data collected from the current statewide PA HCSI focused on corner stores to increase access to healthy foods and beverages; 2) assess the retail environment through systematic data collection to inform POS activities and action focused on retailers selling tobacco products; 3) educate local community decision-makers and the public by incorporating TRU youth activities and messages that are delivered by youth within communities; 4) encourage tobacco retail owners to sign memorandums of understanding (MOUs) committed to the reduction/elimination of tobacco product signage and sales, to sell nicotine replacement therapy products, and post PA Free Quitline materials in as a cost effective way to promote cessation services.

f. **Are citations or warnings issued to retailers or clerks who sell tobacco to minors for inspections that are part of the Synar survey?**

☐ **Yes**    ☒ **No**

*If "Yes" to 5f, please describe the state's procedure for minimizing risk of bias to the survey results from retailers alerting each other to the presence of the survey teams:*

# SYNAR SURVEY METHODS AND RESULTS

The following questions pertain to the survey methodology and results of the Synar survey used by the state to meet the requirements of the Synar Regulation in FFY 2015 (see 42 U.S.C. 300x-26 and 45 C.F.R. 96.130).

**6. Has the sampling methodology changed from the previous year?**

☐ **Yes**  ☒ **No**

*The state is required to have an approved up-to-date description of the Synar sampling methodology on file with CSAP. Please submit a copy of your Synar Survey Sampling Methodology (Appendix B). If the sampling methodology changed from the previous reporting year, these changes must be reflected in the methodology submitted.*

**7. Please answer the following questions regarding the state's annual random, unannounced inspections of tobacco outlets** *(see 45 C.F.R. 96.130(d)(2)).*

    **a. Did the state use the optional Synar Survey Estimation System (SSES) to analyze the Synar survey data?**

    ☐ **Yes**  ☒ **No**

    *If **Yes**, attach SSES summary tables 1, 2, 3, and 4 to the hard copy of the ASR and upload a copy of SSES tables 1–5 (in Excel) to WebBGAS. Then go to Question 8. If **No**, continue to Question 7b.*

    **b. Report the weighted and unweighted Retailer Violation Rate (RVR) estimates, the standard error, accuracy rate (number of eligible outlets divided by the total number of sampled outlets), and completion rate (number of eligible outlets inspected divided by the total number of eligible outlets).**

    **Unweighted RVR**      **8.7**

    **Weighted RVR**      **10.5**

    **Standard error (s.e.) of the (weighted) RVR**      **1.1**

    **Fill in the blanks to calculate the <u>right limit</u> of the right-sided 95% confidence interval.**

| 10.5 | + | (1.645 | × | 1.1) | = | 12.3 |
|---|---|---|---|---|---|---|
| **RVR Estimate** | **plus** | **(1.645** | **times** | **Standard Error)** | **equals** | **Right Limit** |

    **Accuracy rate**      **70.7**

    **Completion rate**      **99.8**

    **c. Fill out Form 1 in Appendix A (Forms 1–5).** *(Required regardless of the sample design.)*

**d. How were the (weighted) RVR estimate and its standard error obtained?**
*(Check the one that applies.)*

☐ Form 2 (Optional) in Appendix A (Forms 1–5) *(Attach completed Form 2.)*

☒ Other *(Please specify. Provide formulas and calculations or attach and explain the program code and output with description of all variable names.)*

> See Attachements:
>
> Attachment 1: Calculation of Weighted Retailer Violation Rate Explanation
>
> Attachment 2: Calculation of Weighted Retailer Violation SAS Programming Code
>
> Attachment 3: Weight Check and Weights Tables
>
> Attachment 4: Survey Means Tables

**e. If stratification was used, did any strata in the sample contain only one outlet or cluster this year?**

☐ **Yes**   ☒ **No**   ☐ **No stratification**

*If Yes, explain how this situation was dealt with in variance estimation.*

> 

**f. Was a cluster sample design used?**

☒ **Yes**   ☐ **No**

*If Yes, fill out and attach Form 3 in Appendix A (Forms 1–5), and answer the following question.*

*If No, go to Question 7g.*

**Were any certainty primary sampling units selected this year?**

☐ **Yes**   ☒ **No**

*If Yes, explain how the certainty clusters were dealt with in variance estimation.*

> 

**g. Report the following outlet sample sizes for the Synar survey.**

|  | Sample Size |
|---|---|
| **Effective sample size** (sample size needed to meet the SAMHSA precision requirement assuming simple random sampling) | 533 |
| **Target sample size** (the product of the effective sample size and the design effect) | 693 |
| **Original sample size** (inflated sample size of the target sample to counter the sample attrition due to ineligibility and non-completion) | 1,753 |
| **Eligible sample size** (number of outlets found to be eligible in the sample) | 1,240 |
| **Final sample size** (number of eligible outlets in the sample for which an inspection was completed) | 1,237 |

h. **Fill out Form 4 in Appendix A (Forms 1–5).**


8. **Did the state's Synar survey use a list frame?**

   ☒ **Yes**   ☐ **No**

   *If **Yes**, answer the following questions about its coverage.*

   a. **The calendar year of the latest frame coverage study: <u>2013</u>**

   b. **Percent coverage from the latest frame coverage study: <u>99.1</u>**

   c. **Was a new study conducted in this reporting period?**

      ☐ **Yes**   ☒ **No**

      *If **Yes**, please complete Appendix D (List Sampling Frame Coverage Study) and submit it with the Annual Synar Report.*

   d. **The calendar year of the next coverage study planned: <u>2016</u>**

9. **Has the Synar survey inspection protocol changed from the previous year?**

   ☐ **Yes**   ☒ **No**

   *The state is required to have an approved up-to-date description of the Synar inspection protocol on file with CSAP. Please submit a copy of your Synar Survey Inspection Protocol (Appendix C). If the inspection protocol changed from the previous year, these changes must be reflected in the protocol submitted.*

   a. **Provide the inspection period: From** <u>07/20/15</u> **to** <u>09/08/15</u>
      **MM/DD/YY  MM/DD/YY**

   b. **Provide the number of youth inspectors used in the current inspection year:**

      <u>54</u>

      NOTE: If the state uses SSES, please ensure that the number reported in 9b matches that reported in SSES Table 4, or explain any difference.

   b. **Fill out and attach Form 5 in Appendix A (Forms 1–5).** *(Not required if the state used SSES to analyze the Synar survey data.)*

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## SECTION II: FFY 2016 (Intended Use):

Public law 42 U.S.C. 300x-26 of the Public Health Service Act and 45 C.F.R. 96.130 (e) (4, 5) require that the states provide information on future plans to ensure compliance with the Synar requirements to reduce youth tobacco access.

1. **In the upcoming year, does the state anticipate any changes in:**

   Synar sampling methodology    ☐ **Yes**    ☒ **No**
   Synar inspection protocol        ☐ **Yes**    ☒ **No**

   *If changes are made in either the Synar sampling methodology or the Synar inspection protocol, the state is required to obtain approval from CSAP prior to implementation of the change and file an updated Synar Survey Sampling Methodology (Appendix B) or an updated Synar Survey Inspection Protocol (Appendix C), as appropriate.*

2. **Please describe the state's plans to maintain and/or reduce the target rate for Synar inspections to be completed in FFY 2016. Include a brief description of plans for law enforcement efforts to enforce youth tobacco access laws, activities that support law enforcement efforts to enforce youth tobacco access laws, and any anticipated changes in youth tobacco access legislation or regulation in the state.**

   Pennsylvania enacted the Tobacco Settlement Act (Act 2001-77) on June 26, 2001. Chapter 7 of that legislation outlined requirements relative to prevention and cessation activities. The Act established a tobacco use prevention and cessation program with the Department of Health. Seventy percent of funds received through the Tobacco Settlement fund to the Department under Chapter 7 must be awarded to primary contractors to establish comprehensive tobacco control programs within their service areas.

   Act 2002-112 amended the youth access to tobacco law, creating a fine structure for both store owners and clerks, as well as increased penalties and license revocation and/or suspension for owners. This Act also restricted placement of vending machines and provided a penalty structure for youth attempting to purchase tobacco. In addition, enforcement authority was expanded to include the Department of Health, County or Municipal Health Departments, Single County Authorities created pursuant to the Pennsylvania Drug and Alcohol Control Act, or Primary Contractors pursuant to Chapter 7 of the Tobacco Settlement Act. The contracts with the eight Regional Primary Contractors (RPCs), who provide services to all sixty-seven counties of the Commonwealth, contains language requiring them to conduct compliance checks on all tobacco retail outlets within their service area. However, with more recent limitations associated with funding, it has been necessary to waive this requirement and instead implement a more strategic and limited approach in conducting enforcement checks within the confines of available resources.

   With on-going enforcement, standardization of the compliance check protocol, annual enforcement training and effective statewide partnerships with the Department of Revenue, the Office of the Attorney General Enforcement Division, and the Pennsylvania Justice Systems, the rate of illegal tobacco sales continues to be sustained within the violation rate maximum allowance. The Department of Health continues to collaborate with the RPCs to integrate statewide media retailer education campaigns with initiatives that engage local

communities through customized retailer and community-specific youth access education.

3. **Describe any challenges the state faces in complying with the Synar regulation.** *(Check all that apply.)*

- ☐ Limited resources for law enforcement of youth access laws
- ☒ Limited resources for activities to support enforcement and compliance with youth tobacco access laws
- ☐ Limitations in the state youth tobacco access laws
- ☐ Limited public support for enforcement of youth tobacco access laws
- ☐ Limitations on completeness/accuracy of list of tobacco outlets
- ☐ Limited expertise in survey methodology
- ☐ Laws/regulations limiting the use of minors in tobacco inspections
- ☐ Difficulties recruiting youth inspectors
- ☐ Issues regarding the age balance of youth inspectors
- ☐ Issues regarding the gender balance of youth inspectors
- ☐ Geographic, demographic, and logistical considerations in conducting inspections
- ☐ Cultural factors (e.g., language barriers, young people purchasing for their elders)
- ☐ Issues regarding sources of tobacco under tribal jurisdiction
- ☐ Other challenges *(Please list.)* _____

*Briefly describe all checked challenges and propose a plan for each, or indicate the state's need for technical assistance related to each relevant challenge.*

Limitations relative to funding continue to challenge the ability to support effective tobacco prevention strategies and hamper the ability to conduct annual enforcement checks. This negatively impacts the ability to sustain the lower retailer violation rates attained several years ago.

The Single State Authority (SSA) for Substance Abuse, the Pennsylvania Department of Drug and Alcohol Programs, is working collaboratively with the Pennsylvania Department of Health, the agency responsible for tobacco prevention and control, to strategize and gauge the most effective measures to be utilized to meet federal and state requirements while adequately addressing tobacco prevention and enforcement activities within the resources available.

While addressing the diminished capacity to maintain adequate enforcement checks specific to the state law prohibiting the sale of tobacco products to minors under the age of eighteen, Pennsylvania, as a contract recipient of the Food and Drug Administration (FDA), has been able to conduct compliance checks on retailers through funding received through its agreement with the FDA. The addition of these funds and ability to conduct compliance checks under this initiative enhances the state's ability in enforcement activities and sustaining a more reasonable retailer violation rate, absent sufficient funding available through other sources.

**APPENDIX A:**

**FORMS 1–5**

**FORM 1 (Required for all states not using the Synar Survey Estimation System [SSES] to analyze the Synar Survey data.)**

Form 1 reports sampling frame and sample information used to calculate the un-weighted retailer violation rate (RVR), using results from the current year's Synar survey inspections.

| | | | | |
|---|---|---|---|---|
| <td colspan="16" style="text-align:center">**Summary of Synar Inspection Results by Stratum**<br><br>**State: Pennsylvania**<br><br>**FFY:** 2016</td> |

| (1) | | (2) | | | (3) | | | (4) | | | (5) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **STRATUM** | | **NUMBER OF OUTLETS IN SAMPLING FRAME** | | | **ESTIMATED NUMBER OF ELIGIBLE OUTLETS IN POPULATION** | | | **NUMBER OF OUTLETS INSPECTED** | | | **NO. OF OUTLETS FOUND IN VIOLATION DURING INSPECTIONS** | | |
| (a) Row # | (b) Stratum Name | (a) Over-the-Counter (OTC) | (b) Vending Machines (VM) | (c) Total Outlets (2a+2b) | (a) Over-the-Counter (OTC) | (b) Vending Machines (VM) | (c) Total Outlets (3a+3b) | (a) Over-the-Counter (OTC) | (b) Vending Machines (VM) | (c) Total Outlets (4a+4b) | (a) Over-the-Counter (OTC) | (b) Vending Machines (VM) | (c) Total Outlets (5a+5b) |
| 1 | NC | 971 | 0 | 971 | 636 | 0 | 636 | 78 | 0 | 78 | 4 | 0 | 4 |
| 2 | NE | 2,498 | 0 | 2,498 | 1,715 | 0 | 1,715 | 159 | 0 | 159 | 15 | 0 | 15 |
| 3 | NW | 942 | 0 | 942 | 617 | 0 | 617 | 78 | 0 | 78 | 3 | 0 | 3 |
| 4 | SC | 2,043 | 0 | 2,043 | 1,625 | 0 | 1,625 | 144 | 0 | 144 | 12 | 0 | 12 |
| 5 | SE | 3,235 | 0 | 3,235 | 2,110 | 0 | 2,110 | 210 | 0 | 210 | 6 | 0 | 6 |
| 6 | SW | 1,957 | 0 | 1,957 | 1,513 | 0 | 1,513 | 150 | 0 | 150 | 8 | 0 | 8 |
| 7 | AL | 1,611 | 0 | 1,611 | 1,177 | 0 | 1,177 | 95 | 0 | 95 | 5 | 0 | 5 |
| 8 | DE | 689 | 0 | 689 | 445 | 0 | 445 | 71 | 0 | 71 | 8 | 0 | 8 |
| 9 | ER | 346 | 0 | 346 | 246 | 0 | 246 | 69 | 0 | 69 | 5 | 0 | 5 |
| 10 | PH | 4,672 | 0 | 4,672 | 3,490 | 0 | 3,490 | 183 | 0 | 183 | 42 | 0 | 42 |
| | Totals | 18,964 | 0 | 18,964 | 13,574 | 0 | 13,574 | 1,237 | 0 | 1,237 | 108 | 0 | 108 |

**RECORD COLUMN TOTALS ON LAST LINE (LAST PAGE ONLY IF MULTIPLE PAGES ARE NEEDED).**

**FORM 3 (Required when a cluster design is used for all states not using the Synar Survey Estimation System [SSES] to analyze the Synar survey data.)**

Form 3 reports information about primary sampling units when a cluster design was used for the Synar survey.

| | Summary of Clusters Created and Sampled | | | |
|---|---|---|---|---|
| | | State: **Pennsylvania** | | |
| | | FFY: 2016 | | |
| (1) Row # | (2) Stratum Name | (3) Number of PSUs Created | (4) Number of PSUs Selected | (5) Number of PSUs in the Final Sample |
| 1 | NC | 16 | 6 | 6 |
| 2 | NE | 31 | 12 | 12 |
| 3 | NW | 14 | 6 | 6 |
| 4 | SC | 29 | 10 | 10 |
| 5 | SE | 45 | 16 | 16 |
| 6 | SW | 32 | 11 | 11 |
| 7 | AL | 1,611 | 130 | 95 |
| 8 | DE | 689 | 110 | 71 |
| 9 | ER | 346 | 100 | 69 |
| 10 | PH | 4,672 | 245 | 183 |
| | Total | **7,485** | **646** | **479** |

**FORM 4 (Required for all states not using the Synar Survey Estimation System [SSES] to analyze the Synar Survey data)**

Form 4 provides detailed tallies of ineligible sample outlets by reasons for ineligibility and detailed tallies of eligible sample outlets with non-complete inspections by reasons for non-completion.

<table>
<tr><td colspan="4" align="center"><strong>Inspection Tallies by Reason of Ineligibility or Non-completion</strong></td></tr>
<tr><td colspan="4" align="right"><strong>State:</strong> Pennsylvania</td></tr>
<tr><td colspan="4" align="right"><strong>FFY:</strong> 2016</td></tr>
<tr><td colspan="2" align="center"><strong>(1)<br>INELIGIBLE</strong></td><td colspan="2" align="center"><strong>(2)<br>ELIGIBLE</strong></td></tr>
<tr><td><strong>Reason for Ineligibility</strong></td><td><strong>(a) Counts</strong></td><td><strong>Reason for Non-completion</strong></td><td><strong>(a) Counts</strong></td></tr>
<tr><td>Out of business</td><td>111</td><td>In operation but closed at time of visit</td><td>0</td></tr>
<tr><td>Does not sell tobacco products</td><td>208</td><td>Unsafe to access</td><td>0</td></tr>
<tr><td>Inaccessible by youth</td><td>64</td><td>Presence of police</td><td>0</td></tr>
<tr><td>Private club or private residence</td><td>63</td><td>Youth inspector knows salesperson</td><td>0</td></tr>
<tr><td>Temporary closure</td><td>36</td><td>Moved to new location</td><td>0</td></tr>
<tr><td>Un-locatable</td><td>19</td><td>Drive-thru only/youth inspector has no driver's license</td><td>0</td></tr>
<tr><td>Wholesale only/Carton sale only</td><td>0</td><td>Tobacco out of stock</td><td>0</td></tr>
<tr><td>Vending machine broken</td><td>0</td><td>Ran out of time</td><td>0</td></tr>
<tr><td>Duplicate</td><td>12</td><td rowspan="2">Other non-completion reason(s) <em>(knew owner, knew someone in store, couldn't find till after the survey period)</em></td><td rowspan="2">3</td></tr>
<tr><td>Other ineligibility reason(s) <em>(Describe.)</em><br><br><br><br><br>0</td><td></td></tr>
<tr><td align="right"><strong>Total</strong></td><td>513</td><td align="right"><strong>Total</strong></td><td>3</td></tr>
</table>

**FORM 5 (Required for all states not using the Synar Survey Estimation System [SSES] to analyze the Synar survey data)**

Form 5 shows the distribution of outlet inspection results by age and gender of the youth inspectors.

<table>
<tr><td colspan="3" align="center"><b>Synar Survey Inspector Characteristics</b></td></tr>
<tr><td colspan="3" align="right"><b>State:</b> Pennsylvania</td></tr>
<tr><td colspan="3" align="right"><b>FFY:</b> 2016</td></tr>
<tr><td></td><td align="center">(1)<br>Attempted Buys</td><td align="center">(2)<br>Successful Buys</td></tr>
<tr><td colspan="3"><b>Male</b></td></tr>
<tr><td>15 years</td><td align="center">289</td><td align="center">12</td></tr>
<tr><td>16 years</td><td align="center">372</td><td align="center">32</td></tr>
<tr><td>17 years</td><td align="center">109</td><td align="center">23</td></tr>
<tr><td>18 years</td><td></td><td></td></tr>
<tr><td><b>Male Subtotal</b></td><td align="center"><b>770</b></td><td align="center"><b>67</b></td></tr>
<tr><td colspan="3"><b>Female</b></td></tr>
<tr><td>15 years</td><td align="center">243</td><td align="center">5</td></tr>
<tr><td>16 years</td><td align="center">53</td><td align="center">3</td></tr>
<tr><td>17 years</td><td align="center">171</td><td align="center">33</td></tr>
<tr><td>18 years</td><td></td><td></td></tr>
<tr><td><b>Female Subtotal</b></td><td align="center"><b>467</b></td><td align="center"><b>41</b></td></tr>
<tr><td><b>Other</b></td><td align="center"><b>0</b></td><td align="center"><b>0</b></td></tr>
<tr><td><b>Total</b></td><td align="center"><b>1,237</b></td><td align="center"><b>108</b></td></tr>
</table>

**APPENDIX B:**

**SYNAR SURVEY SAMPLING METHODOLOGY**

# APPENDIX B: SYNAR SURVEY SAMPLING METHODOLOGY

**State:** Pennsylvania
**FFY:** 2016

1. **What type of sampling frame is used?**

   ☒ List frame *(Go to Question 2.)*

   ☐ Area frame *(Go to Question 3.)*

   ☐ List-assisted area frame *(Go to Question 2.)*

2. **List all sources of the list frame. Indicate the type of source from the list below. Provide a brief description of the frame source. Explain how the lists are updated (method), including how new outlets are identified and added to the frame. In addition, explain how often the lists are updated (cycle).** *(After completing this question, go to Question 4.)*

   *Use the corresponding number to indicate* **Type of Source** *in the table below*.

   **1** – Statewide commercial business list      **4** – Statewide retail license/permit list
   **2** – Local commercial business list         **5** – Statewide liquor license/permit list
   **3** – Statewide tobacco license/permit list    **6** – Other

| Name of Frame Source | Type of Source | Description | Updating Method and Cycle |
|---|---|---|---|
| Electronic Cigarette Licnesing System (ECLS) | 3 | Pennsylvania requires a license to sell cigarettes. The ECLS contains a complete list of all locations licensed to sell cigarettes. The database is maintained by the Department of Revenue | Existing licenses are annually renewed by January 15th. New licenses can be applied for anytime. |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

3. **If an area frame is used, describe how area sampling units are defined and formed.**

   |  |
   |---|

   a. **Is any area left out in the formation of the area frame?**

   ☐ **Yes**    ☐ **No**

   *If **Yes,** what percentage of the state's population is not covered by the area frame?*
   _____%

4. **Federal regulation requires that vending machines be inspected as part of the Synar survey. Are vending machines included in the Synar survey?**

   ☐ **Yes**   ☒ **No**

*If No, please indicate the reason(s) they are not included in the Synar survey. Please check all that apply.*

☐ State law bans vending machines.

☒ State law bans vending machines from locations accessible to youth.

☐ State has a contract with the FDA and is actively enforcing the vending machine requirements of the Family Smoking Prevention and Tobacco Control Act.

☐ Other *(Please describe.)* _____

5. **Which category below best describes the sample design?** *(Check only one.)*

☐ **Census** *(STOP HERE: Appendix B is complete.)*

**Unstratified statewide sample:**

☐ Simple random sample *(Go to Question 9.)*

☐ Systematic random sample *(Go to Question 6.)*

☐ Single-stage cluster sample *(Go to Question 8.)*

☐ Multistage cluster sample *(Go to Question 8.)*

**Stratified sample:**

☐ Simple random sample *(Go to Question 7.)*

☐ Systematic random sample *(Go to Question 6.)*

☐ Single-stage cluster sample *(Go to Question 7.)*

☒ Multistage cluster sample *(Go to Question 7.)*

☐ **Other** *(Please describe and go to Question 9.)* _____

6. **Describe the systematic sampling methods.** *(After completing Question 6, go to Question 7 if stratification is used. Otherwise go to Question 9.)*

7. **Provide the following information about stratification.**

   a. **Provide a full description of the strata that are created.**

   Pennsylvania is divided into ten (10) geographic strata. Six of the strata are groups of counties located in specific geographic areas, while the remaining strata are sign-county strata.

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| Stratum | Geographical Area | Counties |
|---------|-------------------|----------|
| 1 | North Central (NC) | Bradford, Centre, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union |
| 2 | Northeast (NE) | Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Susquehanna, Wayne, Wyoming |
| 3 | Northwest (NW) | Cameron, Clarion, Clearfield, Crawford, Elk, Forest, Jefferson, Lawrence, Mckean, Mercer, Venango, Warren |
| 4 | South Central (SC) | Adams, Bedford, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lebanon, Mifflin, Perry, York |
| 5 | Southeast (SE) | Berks, Bucks, Chester, Lancaster, Montgomery, Schuylkill |
| 6 | Southwest (SW) | Armstrong, Beaver, Butler, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland |
| 7 | Allegheny (AL) | Allegheny |
| 8 | Delaware (DE) | Delaware |
| 9 | Erie (ER) | Erie |
| 10 | Philadelphia (PH) | Philadelphia |
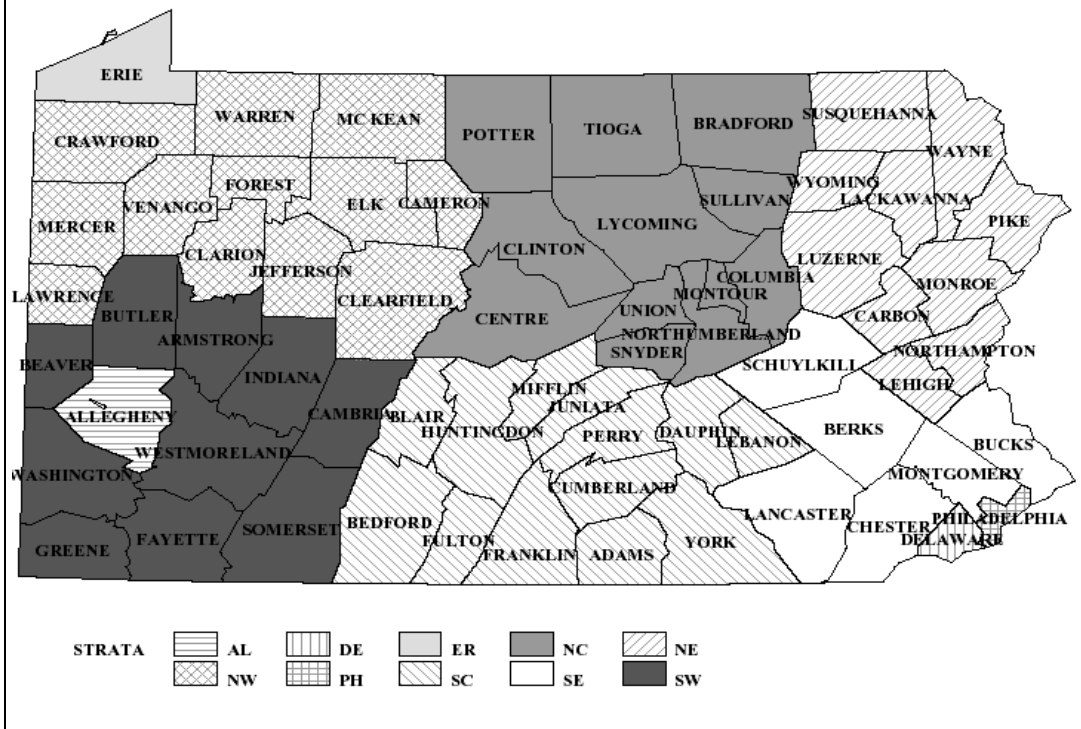


**b. Is clustering used within the stratified sample?**

☒ **Yes** *(Go to Question 8.)*
☐ **No** *(Go to Question 9.)*

8. **Provide the following information about clustering.**

   a. **Provide a full description of how clusters are formed.** *(If multistage clusters are used, give definitions of clusters at each stage.)*

   > The outlets within the six "District" strata numbered 1 thru 6 (NC, NE, NW, SC, SE and SW) are grouped into geographic clusters of adjacent zip codes. Using the sampling frame and a zip code map, the clusters were created by combining outlets with the same zip code to geographically adjacent zip codes. The sampling frame is a list of all outlet zip codes and cluster ids. Every year a list of cigarette outlets with zip codes is obtained from the Department of Revenue and it is used to populate the sampling frame with outlet addresses by matching zip codes. If a new zip is found on the outlet list, a zip code map is used to update the frame and add that zip to the appropriate cluster. Although the size (number of outlets) of the cluster varies from cluster to cluster, pre-determined limits have been placed on the cluster size. If it is discovered that a cluster has become too large (greater than the sampling interval) or too small (less than 40 outlets), it will be divided into two clusters or merged with another cluster. The clusters are mutually exclusive and exhaustive, covering the entire area of strata 1-6. Strata 7-10 are not clustered. Outlets are randomly selected within those strata.

   b. **Specify the sampling method (simple random, systematic, or probability proportional to size sampling) for each stage of sampling and describe how the method(s) is (are) implemented.**

   Pennsylvania uses a mix of cluster and random sampling. The entire state is divided into mutually exclusive and exhaustive strata. A two-stage cluster sampling method is used in 6 of the strata while a simple random method is used in the remaining 4 strata.

   Within the random 4 strata, each outlet is given a unique random number using the SAS Ranuni function. The Ranuni function returns a number that is generated from the uniform distribution on the interval (0,1) using a prime modulus multiplicative generator with modulus $2^{31}$ and multiplier 397204094. The outlets within each stratum are sorted by their random number and a pre-determined number of outlets are selected, starting with the first record. Supplemental sample are not provided for these strata.

   Alternatively, a two-stage cluster sampling method is used in the remaining strata. During stage 1 of the sampling process, clusters are selected with probability proportional to size (number of outlets in the cluster). SAS is used to select both stages of sample. The following describes the method and how it is implemented.

   a. The sampling frame is used to draw the sample. The sampling frame is a file containing cluster level records. Among the variables included are PSU_ID (cluster identification number), PSUsize (Number of outlets within the cluster), bzip (zip code of the outlet) and zipcount (Number of outlets with the same zip code).

b. A sampling interval is calculated for each stratum (Stratum size/number of clusters to be selected).

c. A random start is calculated using the SAS Ranuni function. The random start is calculated by multiplying the random number created by Ranuni by the sampling interval. The result is a number between 1 and the sampling interval (note: Only non-zero random starts are accepted. If the random start is 0, a new random number is used).

d. The sampling frame file is expanded so each record represents one outlet. This enables the use of probability proportional to size sampling. Since larger clusters will have more records on the file and therefore will have a greater chance of being selected. Conversely, smaller clusters will have fewer records and a lesser chance of being selected.

e. The file is sorted by PSU_ID and each record is given a record number according to the new order. The PSU_ID of that record will identify which cluster must be sampled first. To find the second cluster to sample, add the sampling interval to the record number of the first record selected and the PSU_ID of that record tells you the $2^{nd}$ cluster to sample. Continue adding the sampling interval until the max number of clusters for that stratum is reached. Repeat the process for the remaining clustered strata. Each stratum is done separately and has a different random start.

**Example of Stage1 sampling from 2008 survey:** The random Start for stratum1, also known as the NC (North Central) Stratum was 33. The sampling interval was 197. It was calculated by dividing the stratum size (number of outlets in stratum1) by the number of clusters we want to sample in stratum1.

Sampint = Stratsize/Clustnum = 1182 / 6 = 197.000

(1) Count to record number 33. The Psu_Id of that record is 65, therefore the first cluster to sample is cluster 65.

(2) Add the sampling interval (197) to the previously selected record number (33) to obtain the current record number (230). Count to record 230. The Psu_Id of that record is 76, therefore the second cluster to sample is cluster 76.

(3) Add the sampling interval (197) to the previously selected record number (230) to obtain the current record number (427). Count to record 427. The Psu_Id of that record is 143, therefore the Third cluster to sample is cluster 143.

(4) Add the sampling interval (197) to the previously selected record number (427) to obtain the current record number (624). Count to record 624. The Psu_Id of that record is 169, therefore the fourth cluster to sample is cluster 169

(5) Add the sampling interval (197) to the previously selected record number (624) to obtain the current record number (821). Count to record 821. The Psu_Id of that record is 207, therefore the fifth cluster to sample is cluster 207.

(6) Add the sampling interval (197) to the previously selected record number (821) to obtain the current record number (1018). Count to record 1018. The Psu_Id of that record is 220, therefore the sixth cluster to sample is cluster 220.

| Record Number | Strata | Psu_Id | Psusize | Selected cluster |
|---|---|---|---|---|
| 1 | NC | 65 | 57 | . |
| 2 | NC | 65 | 57 | . |
| 3 | NC | 65 | 57 | . |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| 33 | NC | 65 | 57 | 1 |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| 230 | NC | 76 | 81 | 2 |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| 427 | NC | 143 | 80 | 3 |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| 624 | NC | 169 | 100 | 4 |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| 821 | NC | 207 | 59 | 5 |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| 1018 | NC | 220 | 58 | 6 |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |

The results for the North Central can be seen below. "Dist" is the stratum name, "Psu_ID" is the cluster id, "Area" is the cluster description, "Psusize" is the number of outlets in the cluster and "Hit" means that the cluster was selected for the sample. The NC strata had 6 clusters chosen with probability proportional to size.

| Dist | Psu_Id | Area | Psusize | Hit |
|---|---|---|---|---|
| NC | 65 | Centre | 57 | 1 |
| NC | 66 | Centre | 70 | 0 |
| NC | 75 | Clinton | 97 | 0 |
| NC | 76 | Columb/Montour | 81 | 1 |
| NC | 77 | Columb/Montour | 81 | 0 |
| NC | 143 | Lycom/Sullivan | 80 | 1 |
| NC | 144 | Lycom/Sullivan | 67 | 0 |
| NC | 145 | Lycom/Sullivan | 80 | 0 |
| NC | 169 | Northumberland | 100 | 1 |
| NC | 170 | Northumberland | 85 | 0 |
| NC | 207 | Potter | 59 | 1 |
| NC | 214 | Snyder | 59 | 0 |
| NC | 218 | Tioga | 94 | 0 |
| NC | 220 | Union | 58 | 1 |
| NC | 243 | Bradford | 59 | 0 |

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In stage 2, each outlet within the selected cluster is given a unique random number using the SAS Ranuni function. The number of outlets to be selected is pre-determined and the same number is selected from each cluster. The outlets are sorted by their random number and the pre-determined number of outlets is selected beginning with the first record. If supplemental sample is needed, the next available outlet on the list is issued.

9. **Provide the following information about determining the Synar Sample.**

   a. **Was the Synar Survey Estimation System (SSES) used to calculate the sample size?**
      ☐ **Yes** *(Respond to part b.)*
      ☒ **No** *(Respond to part c and Question 10c.)*

   b. **SSES Sample Size Calculator used?**
      ☐ **State Level**     *(Respond to Question 10a.)*
      ☐ **Stratum Level**   *(Respond to Question 10a and 10b.)*

   c. **Provide the formulas for determining the effective, target, and original outlet sample sizes.**

**(1) Effective Sample Size.** According to CSAP requirements, the width ($w$) of the upper limit of the confidence interval must be less than or equal to 3 %. Using the equation for the upper limit of a 95% confidence interval of the sample mean $\bar{x}$ gives

$$\bar{x} + w \qquad\qquad \text{(S1)}$$

Applying the CSAP requirement for $w$ gives

$$w \leq 3 \qquad\qquad \text{(S2)}$$

Where $w$ is defined as

$$w = z(s.e.) \qquad\qquad \text{(S3)}$$

Substituting S3 into S2

$$z(s.e.) \leq 3 \qquad\qquad \text{(S4)}$$

Where $z$ is the critical value of the standard normal distribution for a one sided 95% confidence interval and $s.e.$ is the standard error or standard deviation estimated from the sample data. Substituting 1.645 for $z$ and solving equation S4 for $s.e.$ gives

$$s.e. \le \frac{3}{1.645} \le 1.82$$

Therefore the $s.e.$ must be less than or equal to 1.82 to maintain a width of 3% or less for a right-sided 95% confidence interval.

Ignoring the finite population correction, the $s.e.$ is defined as,

$$s.e. = \frac{\sqrt{p(1-p)}}{\sqrt{n_e}} \qquad (S5)$$

Substituting S5 into S3 gives

$$w = z \left( \frac{\sqrt{p(1-p)}}{\sqrt{n_e}} \right)$$

Solving for $n_e$ gives the equation for the effective sample size

$$n_e = \left( \frac{z}{w} \right)^2 p(1-p),$$

Where $z = 1.645$, $w = 0.03$ (both $z$ & $w$ are based on 95% one-sided CI with tolerance of 3%) and $p = 3\%$ over the target rate (20% + 3% = 23%).

**(2) Target Sample Size**. The equation is:

$$n_t = \text{Deff}_h \times n_e,$$

$\text{Deff}_h$ is the highest design effect from historical Synar surveys of a similar design.

**(3) Original Sample Size**. The equation is:

$$n_o = \frac{n_t}{r_l r_c} + n_A + n_S;$$

$r_l$ = lowest eligibility rate of historical Synar surveys of similar design.
$r_c$ = lowest completion rate of historical Synar surveys of similar design or 80% (whichever is lower).
$n_A$ = sample added or subtracted needed to fit the clustered sample design.
$n_S$ = supplemental sample.

$n_A$ is the number of sample added or subtracted to guarantee that our precision goals are met and the sample size fits the design. The size of $n_A$ is estimated after reviewing output created by a SAS program designed to simulate survey outcomes with varying designs. $n_S$ is the number of supplemental sample allocated to the clustered areas due to sample attrition. Supplemental sample is issued if a cluster does not obtain the minimum number of completions allowed per cluster.

10. **Provide the following information about sample size calculations for the current FFY Synar survey.**

    a. **If the state uses the sample size formulas embedded in the to calculate the state level sample size, please provide the following information:**

       **Inputs for Effective Sample Size:**
       RVR:
       Frame Size:

       **Input for Target Sample Size:**
       Design Effect:

       **Inputs for Original Sample Size:**
       Safety Margin:
       Accuracy (Eligibility) Rate:
       Completion Rate:

    b. **If the state uses the sample size formulas embedded in the SSES Sample Size Calculator to calculate the stratum level sample sizes, please provide the stratum level information:**

    c. **If the state does not use the sample size formulas embedded in the SSES Sample Size Calculator, please provide all inputs required to calculate the effective, target, and original sample sizes as indicated in Question 9.**

Although the methodology and formula used in calculating the Original Sample Size remains constant, the values associated with the referenced variables changes on a yearly basis, based on the most current available data. The effective, target and original sample size formulas were constructed as described in question 9 but the specific inputs and calculations for the Federal Fiscal Year 2016 are described below:

**Effective Sample Size calculations:**

$$n_e = \left(\frac{z}{w}\right)^2 p(1-p)$$

Where $z = 1.645$, $w = 0.03$ (both $z$ & $w$ are based on 95% one-sided CI with tolerance of 3%) and $p = 3\%$ over the target rate (20% + 3% = 23%). Solving,

$$n_e = \left(\frac{1.645}{0.03}\right)^2 .23(1-.23) = 532.5 \approx 533$$

**Target Sample Size calculations:**
The highest design effect was used.

| Year | Complex Variance | Srs Variance | Stderr (Complex) | Stderr (SRS) | Deff |
|------|------------------|--------------|------------------|--------------|------|
| 2004 | 0.000084463 | 0.000065663 | 0.00919 | 0.008103 | 1.29 |
| 2005 | 0.000093154 | 0.000074792 | 0.009652 | 0.008648 | 1.25 |
| 2006 | 0.000070025 | 0.00006112 | 0.008368 | 0.007818 | 1.15 |
| 2007 | 0.000087331 | 0.000067288 | 0.009345 | 0.008203 | 1.30 |
| 2008 | 0.000069768 | 0.000056163 | 0.008353 | 0.007494 | 1.24 |
| 2009 | 0.000074242 | 0.000073052 | 0.008616 | 0.008547 | 1.02 |
| 2010 | 0.000092791 | 0.000080016 | 0.009633 | 0.008945 | 1.16 |
| 2011 | 0.000132254 | 0.00011264 | 0.0115 | 0.010613 | 1.17 |
| 2012 | 0.000121755 | 0.000118312 | 0.011034 | 0.010877 | 1.03 |
| 2013 | 0.000133752 | 0.00012536 | 0.011565 | 0.011196 | 1.07 |
| 2014 | 0.000134009 | 0.000127929 | 0.011576 | 0.011311 | 1.05 |

$$n_t = \text{Deff}_h \times n_e$$

$$n_t = 1.30 \times 533 = 693$$

**Original Sample Size calculations:**
The lowest eligibility rate occurred in 2010 and it was used for the calculations. The lowest completion rate of past surveys was 98%. Since this is extremely high, it was decided to use a completion rate of 80% instead.

| Year | Eligibility Rate | Completion Rate |
|------|------------------|-----------------|
| 2004 | 71.0048 | 98.380 |
| 2005 | 67.959 | 98.742 |
| 2006 | 68.3353 | 99.404 |
| 2007 | 65.2002 | 99.568 |
| 2008 | 63.3803 | 99.829 |
| 2009 | 60.4425 | 99.643 |
| 2010 | 54.5362 | 99.721 |
| 2011 | 58.9648 | 99.638 |
| 2012 | 55.8624 | 100.000 |
| 2013 | 58.4312 | 99.726 |
| 2014 | 55.7028 | 99.065 |

Eligibility Rate: 55%
Completion Rate: 80%

$$n_o = \frac{n_t}{r_l r_c} + n_A + n_S$$

$$n_o = \frac{693}{(.55)(.80)} + 47 + 131 = 1753$$

**APPENDIX C:**

**SYNAR SURVEY INSPECTION PROTOCOL**

# APPENDIX C: SYNAR SURVEY INSPECTION PROTOCOL

<div align="right">

**State:** Pennsylvania

**FFY:** 2016

</div>

*Note: Upload to WebBGAS a copy of the Synar inspection form under the heading "Synar Inspection Form" and a copy of the protocol used to train inspection teams on conducting and reporting the results of the Synar inspections under the heading "Synar Inspection Protocol."*

1. **How does the state Synar survey protocol address the following?**

    a. **Consummated buy attempts?**

    ☒ Required

    ☐ Permitted under specified circumstances (Describe:          )

    ☐ Not permitted

    b. **Youth inspectors to carry ID?**

    ☐ Required

    ☐ Permitted under specified circumstances (Describe:          )

    ☒ Not permitted

    c. **Adult inspectors to enter the outlet?**

    ☐ Required

    ☒ Permitted under specified circumstances (Describe: Safety of outlet determination)

    ☐ Not permitted

    d. **Youth inspectors to be compensated?**

    ☐ Required

    ☐ Permitted under specified circumstances (Describe:          )

    ☒ Not permitted

2. **Identify the agency(ies) or entity(ies) that actually conduct the random, unannounced Synar inspections of tobacco outlets.** *(Check all that apply.)*

    ☐ Law enforcement agency(ies)

    ☒ State or local government agency(ies) other than law enforcement

    ☐ Private contractor(s)

    ☐ Other

    List the agency name(s): **Department of Health and agencies under its jurisdiction.**

3. **Are Synar inspections combined with law enforcement efforts (i.e., do law enforcement**

**representatives issue warnings or citations to retailers found in violation of the law at the time of the inspection?)?**

☐ Always  ☐ Usually  ☐ Sometimes  ☐ Rarely  ☒ Never

**4. Describe the type of tobacco products that are requested during Synar inspections.**

    **a. What type of tobacco products are requested during the inspection?**

        ☒ Cigarettes
        ☐ Small Cigars/Cigarillos
        ☒ Smokeless Tobacco
        ☐ Other

    **b. Describe the protocol for identifying what types of products and what brands of products are requested during an inspection.**

> Inspectors are permitted to attempt to purchase smokeless tobacco when visiting retail outlets that frequently sell such a product, such as in rural areas of the state.

**5. Describe the methods used to recruit, select, and train youth inspectors and adult supervisors.**

> Youth inspectors and adult supervisors are recruited through Tobacco Prevention Control Primary Contractors, local tobacco prevention coalitions, schools, and other community organizations (i.e. scouts, YMCA, YWCA, after school programs).

**6. Are there specific legal or procedural requirements instituted by the state to address the issue of youth inspectors' immunity when conducting inspections?**

    **a. Legal**

    ☒ **Yes**  ☐ **No**

    *(If **Yes**, please describe.)*

> Pennsylvania Act 2002-112 provides minors immunity when conducting Synar survey inspections or participating in tobacco enforcement compliance checks.

    **b. Procedural**

    ☐ **Yes**  ☒ **No**

    *(If **Yes**, please describe.)*

> 

**7. Are there specific legal or procedural requirements instituted by the state to address the issue of the safety of youth inspectors during all aspects of the Synar inspection process?**

    **a. Legal**

    ☐ **Yes**  ☒ **No**

*(If **Yes,** please describe.)*

|  |
|---|

**b. Procedural**

☒ **Yes**  ☐ **No**

*(If **Yes,** please describe.)*

| Youth safety is addressed in the comprehensive training protocol. |
|---|

8. **Are there any other legal or procedural requirements the state has regarding how inspections are to be conducted (e.g., age of youth inspector, time of inspections, training that must occur)?**

   **a. Legal**

   ☐ **Yes**  ☒ **No**

   *(If **Yes,** please describe.)*

   |  |
   |---|

   **b. Procedural**

   ☒ **Yes**  ☐ **No**

   *(If **Yes,** please describe.)*

   | The Pennsylvania Department of Health conducts an annual training with field staff on the conduction of the Synar Survey. This training covers safety of youth inspectors, age of youth inspectors, time of inspections, completion of survey forms, and training of youth inspectors. Recruitment and training of youth inspectors is completed by Regional Primary Contractors and include role-modeling by youth. |
   |---|

# ATTACHMENTS

The following is an explanation of the program code used to obtain the RVR estimate and its standard error. The actual code is contained in Attachment2: Calculation of Weighted Retailer Violation SAS Programming Code.

# Program Overview

(1) Cluster level totals are calculated.
(2) Stratum level totals are calculated.
(3) The *eligible* population for each stratum is estimated. The estimated number of eligible outlets per stratum (S_EligPopSize) is determined with the following equation:

$$S\_EligPopSize = (S\_PopSize) \bullet \left[ \frac{\left( S\_SampSize - S\_Inelig \right)}{S\_SampSize} \right]$$

(4) A base weight for each observation is calculated. The base weight is the inverse of the probability of selection. Determining the base weight requires the calculation of the probability of selection where each outlet has a quantifiable probability of selection. The survey uses a stratified cluster design with the clusters being selected using PPS (Probability Proportionate to Size) sampling. In a complex design, the overall probability of selecting an outlet is the product of each stage's probability of selection. Therefore, the survey's probability of selection is the probability of selecting a cluster multiplied by the probability of selecting an outlet within the cluster.(See **NOTE: Probability of selection**)
(5) A final weight is calculated for each observation. The final weight is an adjustment of the base weight to account for non-completions.

```
*****************SAS Code**************
Finalwt = (Weight * (c_Sampsize/C_Sampob));
*******************************************
```

(6) The weights are exported to be checked and verified.
(7) A weight table is created.
(8) The weight table and weight check table are exported.
(9) The data is recoded and prepared for Proc Surveymeans.
(10) The weighted statewide mean, standard error and confidence bounds are calculated using Proc Surveymeans which uses the Taylor expansion method to estimate sampling errors that take into account both the between cluster and the within cluster variances.
(11) An unweighted statewide mean is calculated.
(12) The results are outputted.

---

**NOTE: Probability of Selection**

---

Let,
$ProbCl$ = Probability of selecting a cluster,
$ProbOut$ = Probability of selecting an outlet within the cluster,
$ProbSt$ = Probability of selection for each outlet in the stratum,
$S\_Clust$ = Number of clusters in the stratum,
$CPS$ = Cluster population size,
$S\_EligPopSize$ = Eligible stratum population size,
$C\_SampSize$ = Sample size of the cluster,

Then,

$$ProbCl = (S\_Clust) \bullet \left( \frac{CPS}{S\_EligPopSize} \right)$$

$$ProbOut = \left( \frac{C\_SampSize}{CPS} \right)$$

$$ProbSt = (ProbCl) \times (ProbOut) = (S\_Clust) \bullet \left( \frac{CPS}{S\_EligPopSize} \right) \bullet \left( \frac{C\_Sampsize}{CPS} \right) =$$

$$ProbSt = (S\_Clust) \bullet \left( \frac{C\_Sampsize}{S\_EligPopSize} \right)$$

The Base Weight is the inverse of the probability of selection for each outlet divided by the total eligible outlets in the stratum (S_EligPopSize). The base weight gives each sampled outlet a weight such that it sums to the number of eligible outlets in the state.

$$\text{Base Weight} = \frac{1}{\dfrac{(S\_clust)(C\_Sampsize)}{(S\_EligPopSize)}} = \frac{(S\_EligPopSize)}{(S\_clust)(C\_Sampsize)}$$

```
******************SAS Code******************
Weight = (1/((s_clust * c_Sampsize) / (s_EligPopSize)));
*********************************************
```

# Input files used in the program

(1) RawInput.sas7bdat – (Input) Permanent SAS dataset created from the raw survey data for additional analysis and comparisons to previous surveys. The dataset is used to create Form4, Form5 and to check the other forms of the Synar report. The dataset contains all records whether they are eligible, ineligible, completed or not completed. The variables are standardized so the variable types (i.e., character or numeric) are compatible with past variables. The variables Clnum, Sampob, Inelig and Elig are created and added to the dataset.

(2) DistFreq.sas7bdat – (Input) Permanent SAS dataset containing strata level data of stratum population size.

# Output files:

(1) CS_tot.sas7bdat – (Output) Permanent SAS dataset containing cluster and stratum level totals for eligibility, sample observations, violations, ineligibility and sample size.

(2) PreWt.sas7bdat – (Output) Permanent SAS dataset containing cluster and stratum level totals and calculated eligible population size.

(3) Weighted.sas7bdat - Permanent SAS dataset containing one record for each eligible outlet. The weights are contained in this dataset.

(4) Wgt14.sas7bdat - Permanent SAS dataset used in trend analysis.

(5) WtTabl14.html (Output) – table that lists all sampled clusters, outlet weights, cluster sample size, eligible sample and completed sample. Also includes a table that verifies that the weights add up correctly and shows the unweighted RVR. (Attachment3)

(6) SurveyMeans14.html (Output) – table showing the statewide weighted RVR estimate, statewide standard error, statewide unweighted RVR, statewide frequencies, strata weighted RVR estimates, strata standard error and strata frequencies calculated using the SAS surveymeans procedure(Attachment4)

# Explanation of Variables

*A. Variables inputted from the survey database*

1. **Anum** – Numeric cluster identifier.

2. **Snum** – Numeric outlet identifier within cluster. Snum combined with Anum uniquely identifies each outlet.

3. **Outcome** – Compliance check result. Variable is coded 1 for a sale, 2 for a refusal and 3 for a non-completion.

4. **Noncomp** – Numeric variable used to classify the non-completed compliance checks.

5. **Outlet** – Numeric variable used to classify the type of outlet

6. **Alcohol** – Numeric variable that identifies outlets that serve alcohol by the glass and codes them with a 1 if they serve alcohol, 2 if they don't and 3 if it cannot be determined.

7. **BuyerAge** – Numeric variable that identifies the age of the youth surveyor and code them with a 1 if 15 years old, 2 if 16 years old and 3 if 17 years old.

8. **BuyerSex** - Numeric variable that identifies the sex of the youth surveyor and codes them with a 1 if male and 2 if female.

9. **BuyerHisp** – Numeric variable that identifies if the youth is of Hispanic origin. Codes them with a 1 if yes, 2 if no.
10. **BuyerRace** - Numeric variable that identifies the race of the youth surveyor. Codes them with a 1 if white, 2 if Black, 3 if Asian and 4 if other.
11. **Adult** – numeric variable that identifies whether the adult supervisor was in the outlet. Coded as 1 if yes, 2 if no.
12. **AskAge** – Numeric variable that identifies whether the youth buyer was asked their age. Coded 1 if yes, 2 if no.
13. **AskId** – Numeric variable that identifies if the youth was asked for identification. Coded 1 if yes, 2 if no.
14. **Warn** – Numeric variable that identifies if there were signs indicating selling to youth under the age of 18 is illegal. Coded 1 if yes, 2 if no.
15. **Clerksex** – numeric variable that identifies the gender of the clerk. Coded 1 if male, 2 if female.
16. **Verifyloc** – Numeric variable that identifies if the adult supervisor verified the location fields provided on the survey form are accurate. Coded 1 if yes, 2 if no.

**B.** *Outlet level variables created*
1. **Elig** – Variable that identifies eligible outlets by coding each observation with either a 1 or a 0 depending on its eligibility.
2. **Inelig** - Variable that identifies ineligible outlets by coding each observation with either a 1 or a 0 depending on its eligibility.
3. **Sampob** – Variable that identifies completed observations by coding each record with either a 1 or a 0.

**C.** *Cluster level variables created within the program*
1. **C_Sampsize** – The total number of outlets sampled per cluster.
2. **C_Elig** – The total number of eligible (Elig) sampled outlets per cluster.
3. **C_Inelig** - The total number of ineligible (Inelig) sampled outlets per cluster.
4. **C_Sampob** – The total number of completed sample observations (Sampob) per cluster.
5. **Psu_id** – The cluster id used in analysis

**D.** *Stratum level variables created within the program*
1. **S_SampSize** – The total number of outlets sampled (Sampsize) per stratum.
2. **S_PopSize** – The total number of outlets per stratum
3. **S_Elig** – The total number of eligible sampled outlets (Eligs) per stratum.
4. **S_Inelig** – The total number of ineligible sampled outlets (Ineligs) per stratum.
5. **S_clust** – The total number of clusters per stratum.
6. **S_EligPopSize** – The estimated number of eligible outlets per stratum.
7. **Stratum** – The stratum identifier calculated as a substring from anum.
8. **Co_str** – The stratum id used in analysis

**Attachment 2:** Calculation of Weighted Retailer Violation SAS Programming Code

```
/*-----------------------------------------------------------*
 |      NAME: Weight15.SAS                                    |
 |    AUTHOR: Stephen Muccioli                                |
 |     TITLE: Synar 2015 weighting program                    |
 |                                                            |
 | DATASETS(Perm.): Synar15.RAWinput                          |
 |                   Synar15.Weighted                         |
 |                   Synar15.Stratadat                        |
 |                   SynarAll.Raw15                           |
 |                   SynarAll.Strat15                         |
 |                   SynarAll.Wgt15                           |
 |                                                            |
 |    DATASETS(Out): ResultTables15.xls                       |
 |                                                            |
 |      PROC OUTPUT: SurveyMeans15.htm                        |
 |                   Weights15.htm                            |
 |                                                            |
 | FUNCTION: See notes at the bottom of the program           |
 |     NOTES: See notes at the bottom of the program          |
 |              *Check "Synar&yr..Rawinput" to make sure it   |
 |               matches the eligible rules decided on.       |
 |              *Update "Given2". Eventually rewrite program  |
 |               to read in strata data from SynarALL         |
 *-----------------------------------------------------------*/


*Last 2 digits of current year;
%let yr=15;
Filename OTC "\\dhhbgbitfp907.prod.dh.lcl\bit_document_storage
\MUCCIOLI-SASinout\SYNAR20&yr.\Synar20&yr..accdb";
Filename Tables "\\dhhbgbitfp907.prod.dh.lcl\bit_document_storage
\MUCCIOLI-SASinout\SYNAR20&yr.\Weights&yr..htm";
Filename WTRES "\\dhhbgbitfp907.prod.dh.lcl\bit_document_storage
\MUCCIOLI-SASinout\SYNAR20&yr.\SurveyMeans&yr..htm";

Libname Synar&yr. "\\dhhbgbitfp907.prod.dh.lcl\bit_document_storage
\MUCCIOLI-SASlibs\SYNAR\Synar&yr\";
Libname SynarALL "\\dhhbgbitfp907.prod.dh.lcl\bit_document_storage
\MUCCIOLI-SASlibs\SYNAR\SynarALL\";
Libname Licen&yr "\\dhhbgbitfp907.prod.dh.lcl\bit_document_storage
\MUCCIOLI-SASlibs\SYNAR\Licen&yr\";

Proc Catalog Catalog=Synar&yr..Formats&yr.; Copy Out=Work.Formats;Run;

Proc Import
    Table="Results"
    Out=Work.Steelers
    Dbms=ACCESS  Replace;
    Database=Otc;
Run;

Data Preraw(Drop=Anum Snum Stratum2 Clnum2);
 Set Steelers;
    Stratum2=Substr(Anum,1,2);
    Clnum2=Substr(Anum,3,2);
```

```
     Anum2=Anum+0;
     Snum2=Snum+0;
     Stratum=Stratum2+0;
     Clnum=Clnum2+0;
  Run;

  Data Rawin(Drop=Anum2 Snum2 Non_Completion Warn_sign);
     Set Preraw;
     Anum=Anum2;
     Snum=Snum2;
     Noncomp=Non_Completion+0;
     Warn=Warn_Sign;
  Run;

 Proc Sort Data=Rawin; By Stratum Anum Snum; Run;

 *--------- Code data -----------*;
 Data Synar&yr..Rawinput;
  Set Rawin;
   By Stratum Anum Snum;
  Options Missing=0;
  Inelig=0;
  Sampob=0;
  Elig=0;
  If (Clnum Eq 0) Then Clnum=1;
  If ((Outcome Eq 1) Or (Outcome Eq 2)) Then Sampob=1;
  If Noncomp In(1 2 3 4 5 6 7 8 9 10 11 12) Then Inelig=1;
  If (Noncomp In(13 14)) Or (Outcome In(1 2)) Then Elig=1;
  If (Outcome Eq 1) Then Violate=1;
  Run;
 Proc Sort; By Stratum Anum Snum; Run;
 Data SynarAll.Raw&yr.;
     Retain Year Stratum Anum Snum Clnum Sampob Elig Inelig Violate
Outcome
          Outlet Noncomp Alcohol Buyersex Buyerage Adult AskID AskAge
Warn
          Clerksex;
     Set Synar&yr..Rawinput;
     Year=20&yr.;
 Run;

 *------- Cluster Level Totals --------*;
 Data Given1 (Keep=Anum Stratum Sampsize Ineligs Sampobs Eligs Clnum
Violates);
  Set Synar&yr..Rawinput;
   By Anum Snum;
   Options Missing=0;

  If First.Anum Then Do; Sampsize=0; Ineligs=0; Sampobs=0; Eligs=0;
                          Violates=0; End;
  Sampsize+1;
  Ineligs+Inelig;
  Sampobs+Sampob;
```

**Attachment 2:** Calculation of Weighted Retailer Violation SAS Programming Code

```
 Eligs+Elig;
 Violates+Violate;
 If Last.Anum;
Run;
Proc Sort; By Stratum Anum; Run;

*------- Strata Level Totals --------*;
Data Sumit (Keep=Stratum Sampst Ineligst Nclust Eligst Sampobst
Violatst);
 Set Given1;
  By Stratum Anum;

If First.Stratum Then Do; Sampst=0; Ineligst=0; Nclust=0; Eligst=0;
                           Violatst=0; Sampobst=0; End;
 Sampst+Sampsize;
 Sampobst+Sampobs;
 Ineligst+Ineligs;
 Eligst+Eligs;
 Violatst+Violates;
 Nclust=Clnum;
 If Last.Stratum Then Output;
Run;

Data Sumall;
 Merge Given1 Sumit;
  By Stratum;
Run;

Proc Sort; By Stratum Anum; Run;

Data Given2;
 Set Sumall;
  By Stratum Anum;
 Elign=0;
 Temp=1;
*Stsize updated for 2015;
/* -----------------------------------------------------*
 * C:\MUCCIOLI\SYNARYYYY\SAMPLE\Output\Prestage1.Htm    *
 *-----------------------------------------------------*/

If (Stratum Eq 1) Then Do;                               /*North
Central*/
            Stsize = 971;
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1); End;

If (Stratum Eq 2) Then Do;                               /
*Northeast*/
            Stsize = 2498;
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1);  End;

If (Stratum Eq 3) Then Do;                               /
*Northwest*/
```

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**Attachment 2:** Calculation of Weighted Retailer Violation SAS Programming Code

```
            Stsize = 942;                                    /*(Minus ER)
*/
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1);   End;

If (Stratum Eq 4) Then Do;                                   /*South
Central*/
            Stsize = 2043;
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1);   End;

If (Stratum Eq 5) Then Do;                                   /
*Southeast*/
            Stsize = 3235;                                   /*(Minus
DE,PH)*/
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1);   End;

If (Stratum Eq 6) Then Do;                                   /
*Southwest*/
            Stsize = 1957;                                   /*(Minus
AL)*/
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1);   End;

If (Stratum Eq 7) Then Do;                                   /
*Allegheny*/
            Stsize = 1611;
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1);   End;

If (Stratum Eq 8) Then Do;                                   /
*Delaware*/
            Stsize = 689;
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1);   End;

If (Stratum Eq 9) Then Do;                                   /*Erie*/
            Stsize = 346;
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1); End;

If (Stratum Eq 10) Then Do;                                  /
*Philadelphia*/
            Stsize = 4672;
            Elign = ((Stsize)*((Sampst-Ineligst)/Sampst));
            Elign = Round(Elign,1); End;
Run;

Proc Sort; By Stratum Anum; Run;

******************************************************************
* Base Weight: Since clusters were selected with probability      *
```

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**Attachment 2:** Calculation of Weighted Retailer Violation SAS Programming Code

```
* proportionate to size, the size of the cluster cancels out and    *
* the base weight is the inverse of the number of opportunities an   *
* observation had to be selected (Nclust * Sampsize) divided by the  *
* estimated number of eligible outlets in the stratum (Elign).       *
* .................................................................*
* Final Weight: Final Wgt adjusts for original sample elements       *
* for which data was not collected for any reason.                   *
********************************************************************;


Data Weights;
Set Given2;
 By Stratum;
 *Temp Is Only Needed For Printing The Weights Table;
Temp=1;
Weight = (1/((Nclust * Sampsize) / (Elign)));
Finalwt = (Weight * (Sampsize/Sampobs));
Run;

*Stratum level data. Can be used for Form1;
Data prestr(Drop=Stnum);
    Set Licen&yr..Distfreq;
    Stratum=Stnum;
Run;
Proc sort; By Stratum; run;

Data prStrat(Keep=Stratum Stsize Elign Nclust Sampst Eligst
    Ineligst Sampobst Violatst);
    Set Weights;
    By Stratum;
    If first.Stratum;
Run;
Proc sort; By Stratum; run;

Data Synar&yr..Stratadat(drop=nclust);
    Attrib Stname length=$5;
    Merge prStrat prestr;
    By Stratum;
    If stratum in(1 2 3 4 5 6) Then PSUfinal=PSUsamp;
    If stratum in(7 8 9 10) Then PSUfinal=SAMPOBST;
Run;
*Add state totals;
Data stated(keep=stratum sampst Ineligst Eligst Violatst Sampobst
Elign Stsize
            Stname PSUtot PSUsamp PSUfinal);
    Attrib Stname length=$5;
    set synar&yr..stratadat end=a;
    tSampst + sampst;
    tIneligst + Ineligst;
    tEligst + Eligst;
    tViolatst + Violatst;
    tSampobst + Sampobst;
    tElign + Elign;
    tStsize + Stsize;
    tPSUtot + PSUtot;
```

```sas
      tPSUsamp + PSUsamp;
      tPSUfinal + PSUfinal;
      If a then do;
           Stratum=0;
           Sampst=tsampst;
           Ineligst=tIneligst;
           Eligst=tEligst;
           Violatst=tViolatst;
           Sampobst=tSampobst;
           Elign=tElign;
           Stsize=tStsize;
           Stname="State";
           PSUtot=tPSUtot;
           PSUsamp=tPSUsamp;
           PSUfinal=tPSUfinal;
           Output;
      End;
run;
Data Synar&yr..Stratadat; set stated Synar&yr..Stratadat; Run;
Data SynarALL.Strat&yr.; set Synar&yr..Stratadat; Run;
Proc sort; by Stratum; run;

Data A;
    Set Given2;
     By Stratum;
*Temp Is Only Needed For Printing The Weights Table;
Temp=1;
If First.Stratum;
 Output;
Run;

Proc Means Data=A Sum Noprint;
 Var Elign;
 Id Temp;
Output Out=Elignsum Sum=Totelign;
Run;

 Data Printit;
    Merge Weights Elignsum;
    By Temp;
 Run;

* Weight Check;
Data Chk;
 Set Weights;
 *Base weight: The sum should equal the total eligible population;
 Checkb=Weight*Sampsize;
 *Final weight: The sum should equal the total eligible population;
 Checkf=Finalwt*Sampobs;
Run;

Ods Html Body=Tables
    Rs=None;
Proc Means Sum;
```

**Attachment 2:** Calculation of Weighted Retailer Violation SAS Programming Code

```
 Var Checkb Checkf;
 Label Checkb="Base Weight Check" Checkf="Final Weight Check";
 Title "20&yr. Synar Weight Check";
Run;

Proc Print Data = Printit label split="$";
   Id Anum;
   Var Stratum Weight Finalwt Nclust Sampsize Eligs Sampobs Sampst
Elign Totelign;
   Label Weight="Outlet$BaseWt" Finalwt="Outlet$Finalwt"
Nclust="Cluster$Total"
        Sampsize="Cluster$Samplesize" Eligs="Cluster$Elig"
Sampobs="Cluster$Completed"
        Sampst="Stratum$Samplesize" Elign="Stratum$Elig"
Totelign="State$Eligible";
   Format Stratum Stra2fmt.;
   Title "20&yr. Synar Weights Table";
Run;
Ods Html Close;
Quit;

/* preobs is needed to assure that all sampobs will be recognized even
if the
   last record of the stratum is an inelligible non sample observation
like
   stratum 9 in 2006.*/
Data preobs;
    Set Synar&yr..Rawinput;
    If (Sampob Eq 1);
Run;

Data Observ (Drop=A B);
 Merge preobs Weights;
   By Stratum Anum;
    Psu_Id=0;
    Co_Str=0;
    Rec_Num=0;
 If Last.Stratum Then LStrat=1;

 If Stratum In(1,2,3,4,5,6) Then Do;
    A+1; Rec_Num=A; Co_Str=Stratum; Psu_Id=Anum+0;
    If Lstrat=1 Then A=0;
 End;

 If Stratum In(7 8 9 10) Then Do;
    *Multiply by 10 so numbers dont overlap if cluster bigger than
100;
    B+1; Rec_Num=B; Co_Str=Stratum; Psu_Id=(Anum*10)+B;
    If Lstrat=1 Then B=0;
 End;

Run;

Proc Sort Data=Observ; By Stratum Anum; Run;
```

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**Attachment 2:** Calculation of Weighted Retailer Violation SAS Programming Code

```
Proc Sort Data=Weights; By Stratum Anum; Run;


Data Synar&yr..Weighted;
  Merge Observ Weights;
     By Stratum Anum;
Run;
Proc Sort Data=Synar&yr..Weighted; By Stratum Anum; Run;
Data SynarALL.Wgt&yr.(drop=temp lstrat);
    Retain Stratum Co_Str Clnum PSU_ID Anum Snum Rec_num Weight
Finalwt Stsize
        Elign Sampobst Violatst Eligst Nclust Ineligst Sampst Violates
Eligs
        Sampobs Ineligs Sampsize Inelig Sampob Elig Violate Outcome
Outlet
        Noncomp Alcohol Buyersex Buyerage buyerHisp buyerrace Adult
AskID
        AskAge Warn Clerksex verifyloc;
    Set Synar&yr..Weighted;
    Year=20&yr.;
Run;


Options Nodate;
Ods Html Body=Wtres;


Proc Surveymeans Data=Synar&yr..Weighted;
 Class Outcome;
 Strata Co_Str;
 Cluster Psu_Id;
 Var Outcome;
 Weight Finalwt;
 Format Stratum Stra2fmt.;
 Title "Final Weighted Results 20&yr.";
 ODS Output Statistics=Xstat
            Summary=Xsum;
Run;


Proc Freq Data=Synar&yr..Weighted;
    Tables Outcome;
    Format Outcome Q1fmt.;
    Title "Unweighted Results";
Run;


Proc Surveymeans Data=Synar&yr..Weighted;
 Domain Stratum;
 Class Outcome;
 Strata Co_Str;
 Cluster Psu_Id;
 Var Outcome;
 Weight Finalwt;
 Format Stratum Stra2fmt.;
 Title "Final Weighted Results 20&yr. (By Stratum)";
 ODS Output Domain=Ystat
            Summary=Ysum;
Run;


Ods Html Close;
Quit;
```

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# **Attachment 3:** Weight Check & Weights Tables

SAS Output

## 2015 Synar Weight Check

### The MEANS Procedure

| Variable | Label | Sum |
|---|---|---|
| Checkb | Base Weight Check | 13574.00 |
| Checkf | Final Weight Check | 13574.00 |

## 2015 Synar Weights Table

| Anum | Stratum | Outlet BaseWt | Outlet Finalwt | Cluster Total | Cluster Samplesize | Cluster Elig | Cluster Completed | Stratum Samplesize | Stratum Elig | State Eligible |
|---|---|---|---|---|---|---|---|---|---|---|
| 101 | NC | 4.8182 | 8.1538 | 6 | 22 | 13 | 13 | 119 | 636 | 13574 |
| 102 | NC | 5.5789 | 8.1538 | 6 | 19 | 13 | 13 | 119 | 636 | 13574 |
| 103 | NC | 5.8889 | 8.1538 | 6 | 18 | 13 | 13 | 119 | 636 | 13574 |
| 104 | NC | 4.2400 | 8.1538 | 6 | 25 | 13 | 13 | 119 | 636 | 13574 |
| 105 | NC | 5.8889 | 8.1538 | 6 | 18 | 13 | 13 | 119 | 636 | 13574 |
| 106 | NC | 6.2353 | 8.1538 | 6 | 17 | 13 | 13 | 119 | 636 | 13574 |
| 201 | NE | 7.5219 | 10.9936 | 12 | 19 | 13 | 13 | 233 | 1715 | 13574 |
| 202 | NE | 6.8056 | 10.9936 | 12 | 21 | 13 | 13 | 233 | 1715 | 13574 |
| 203 | NE | 7.5219 | 10.9936 | 12 | 19 | 13 | 13 | 233 | 1715 | 13574 |
| 204 | NE | 7.1458 | 10.9936 | 12 | 20 | 13 | 13 | 233 | 1715 | 13574 |
| 205 | NE | 7.5219 | 10.9936 | 12 | 19 | 13 | 13 | 233 | 1715 | 13574 |
| 206 | NE | 8.4069 | 10.9936 | 12 | 17 | 14 | 13 | 233 | 1715 | 13574 |
| 207 | NE | 6.2138 | 10.9936 | 12 | 23 | 13 | 13 | 233 | 1715 | 13574 |
| 208 | NE | 7.5219 | 10.9936 | 12 | 19 | 13 | 13 | 233 | 1715 | 13574 |
| 209 | NE | 6.4962 | 10.9936 | 12 | 22 | 13 | 13 | 233 | 1715 | 13574 |
| 210 | NE | 8.4069 | 10.2083 | 12 | 17 | 14 | 14 | 233 | 1715 | 13574 |
| 211 | NE | 8.4069 | 9.5278 | 12 | 17 | 15 | 15 | 233 | 1715 | 13574 |
| 212 | NE | 7.1458 | 10.9936 | 12 | 20 | 13 | 13 | 233 | 1715 | 13574 |
| 301 | NW | 4.2847 | 7.9103 | 6 | 24 | 13 | 13 | 119 | 617 | 13574 |
| 302 | NW | 4.8968 | 7.9103 | 6 | 21 | 13 | 13 | 119 | 617 | 13574 |
| 303 | NW | 4.8968 | 7.9103 | 6 | 21 | 13 | 13 | 119 | 617 | 13574 |
| 304 | NW | 5.7130 | 7.9103 | 6 | 18 | 13 | 13 | 119 | 617 | 13574 |
| 305 | NW | 5.7130 | 7.9103 | 6 | 18 | 13 | 13 | 119 | 617 | 13574 |
| 306 | NW | 6.0490 | 7.9103 | 6 | 17 | 13 | 13 | 119 | 617 | 13574 |
| 401 | SC | 9.5588 | 11.6071 | 10 | 17 | 14 | 14 | 181 | 1625 | 13574 |
| 402 | SC | 6.7708 | 12.5000 | 10 | 24 | 13 | 13 | 181 | 1625 | 13574 |
| 403 | SC | 9.5588 | 10.1563 | 10 | 17 | 16 | 16 | 181 | 1625 | 13574 |
| 404 | SC | 9.5588 | 11.6071 | 10 | 17 | 14 | 14 | 181 | 1625 | 13574 |
| 405 | SC | 8.1250 | 12.5000 | 10 | 20 | 13 | 13 | 181 | 1625 | 13574 |
| 406 | SC | 9.0278 | 12.5000 | 10 | 18 | 13 | 13 | 181 | 1625 | 13574 |
| 407 | SC | 9.5588 | 9.5588 | 10 | 17 | 17 | 17 | 181 | 1625 | 13574 |
| 408 | SC | 9.5588 | 11.6071 | 10 | 17 | 14 | 14 | 181 | 1625 | 13574 |
| 409 | SC | 9.5588 | 12.5000 | 10 | 17 | 13 | 13 | 181 | 1625 | 13574 |
| 410 | SC | 9.5588 | 9.5588 | 10 | 17 | 17 | 17 | 181 | 1625 | 13574 |

# Attachment 3: Weight Check & Weights Tables

SAS Output

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **501** | SE | 7.7574 | 10.1442 | 16 | 17 | 13 | 13 | 322 | 2110 | 13574 |
| **502** | SE | 5.7337 | 10.9896 | 16 | 23 | 12 | 12 | 322 | 2110 | 13574 |
| **503** | SE | 6.9408 | 10.1442 | 16 | 19 | 13 | 13 | 322 | 2110 | 13574 |
| **504** | SE | 5.9943 | 10.1442 | 16 | 22 | 13 | 13 | 322 | 2110 | 13574 |
| **505** | SE | 6.9408 | 10.1442 | 16 | 19 | 13 | 13 | 322 | 2110 | 13574 |
| **506** | SE | 6.2798 | 10.1442 | 16 | 21 | 13 | 13 | 322 | 2110 | 13574 |
| **507** | SE | 5.0721 | 9.4196 | 16 | 26 | 14 | 14 | 322 | 2110 | 13574 |
| **508** | SE | 6.9408 | 10.1442 | 16 | 19 | 13 | 13 | 322 | 2110 | 13574 |
| **509** | SE | 7.7574 | 9.4196 | 16 | 17 | 14 | 14 | 322 | 2110 | 13574 |
| **510** | SE | 7.7574 | 10.1442 | 16 | 17 | 13 | 13 | 322 | 2110 | 13574 |
| **511** | SE | 5.7337 | 10.1442 | 16 | 23 | 13 | 13 | 322 | 2110 | 13574 |
| **512** | SE | 5.9943 | 10.1442 | 16 | 22 | 13 | 13 | 322 | 2110 | 13574 |
| **513** | SE | 6.9408 | 10.1442 | 16 | 19 | 13 | 13 | 322 | 2110 | 13574 |
| **514** | SE | 6.2798 | 10.1442 | 16 | 21 | 13 | 13 | 322 | 2110 | 13574 |
| **515** | SE | 7.7574 | 9.4196 | 16 | 17 | 14 | 14 | 322 | 2110 | 13574 |
| **516** | SE | 6.5938 | 10.1442 | 16 | 20 | 13 | 13 | 322 | 2110 | 13574 |
| **601** | SW | 8.0909 | 9.1697 | 11 | 17 | 15 | 15 | 194 | 1513 | 13574 |
| **602** | SW | 8.0909 | 10.5804 | 11 | 17 | 13 | 13 | 194 | 1513 | 13574 |
| **603** | SW | 8.0909 | 9.8247 | 11 | 17 | 14 | 14 | 194 | 1513 | 13574 |
| **604** | SW | 8.0909 | 10.5804 | 11 | 17 | 13 | 13 | 194 | 1513 | 13574 |
| **605** | SW | 8.0909 | 9.8247 | 11 | 17 | 14 | 14 | 194 | 1513 | 13574 |
| **606** | SW | 6.2521 | 10.5804 | 11 | 22 | 13 | 13 | 194 | 1513 | 13574 |
| **607** | SW | 8.0909 | 10.5804 | 11 | 17 | 13 | 13 | 194 | 1513 | 13574 |
| **608** | SW | 8.0909 | 9.8247 | 11 | 17 | 14 | 14 | 194 | 1513 | 13574 |
| **609** | SW | 8.0909 | 9.8247 | 11 | 17 | 14 | 14 | 194 | 1513 | 13574 |
| **610** | SW | 8.0909 | 9.8247 | 11 | 17 | 14 | 14 | 194 | 1513 | 13574 |
| **611** | SW | 7.2392 | 10.5804 | 11 | 19 | 13 | 13 | 194 | 1513 | 13574 |
| **700** | AL | 9.0538 | 12.3895 | 1 | 130 | 95 | 95 | 130 | 1177 | 13574 |
| **800** | DE | 4.0455 | 6.2676 | 1 | 110 | 71 | 71 | 110 | 445 | 13574 |
| **900** | ER | 2.4600 | 3.5652 | 1 | 100 | 71 | 69 | 100 | 246 | 13574 |
| **1000** | PH | 14.2449 | 19.0710 | 1 | 245 | 183 | 183 | 245 | 3490 | 13574 |

SAS Output

## Final Weighted Results 2015

### The SURVEYMEANS Procedure

| Data Summary | |
|---|---|
| Number of Strata | 10 |
| Number of Clusters | 479 |
| Number of Observations | 1237 |
| Sum of Weights | 13574 |

| Class Level Information | | | |
|---|---|---|---|
| CLASS Variable | Label | Levels | Values |
| Outcome | Outcome | 2 | 1 2 |

| Statistics | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | Level | Label | N | Mean | Std Error of Mean | 95% CL for Mean | |
| Outcome | 1 | Outcome | 108 | 0.105119 | 0.011042 | 0.08342128 | 0.12681700 |
| | 2 | Outcome | 1129 | 0.894881 | 0.011042 | 0.87318300 | 0.91657872 |

## Unweighted Results

### The FREQ Procedure

| Outcome | | | | |
|---|---|---|---|---|
| Outcome | Frequency | Percent | Cumulative Frequency | Cumulative Percent |
| Sale | 108 | 8.73 | 108 | 8.73 |
| Refusal | 1129 | 91.27 | 1237 | 100.00 |

## Final Weighted Results 2015 (By Stratum)

### The SURVEYMEANS Procedure

| Data Summary | |
|---|---|
| Number of Strata | 10 |
| Number of Clusters | 479 |
| Number of Observations | 1237 |
| Sum of Weights | 13574 |

| Class Level Information | | | |
|---|---|---|---|
| CLASS Variable | Label | Levels | Values |
| Outcome | Outcome | 2 | 1 2 |

| Statistics | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | Level | Label | N | Mean | Std Error of Mean | 95% CL for Mean | |
| Outcome | 1 | Outcome | 108 | 0.105119 | 0.011042 | 0.08342128 | 0.12681700 |
| | 2 | Outcome | 1129 | 0.894881 | 0.011042 | 0.87318300 | 0.91657872 |

**Attachment 4:** Survey Means Table

SAS Output

### Final Weighted Results 2015 (By Stratum)

#### The SURVEYMEANS Procedure

| | | | | | | | 95% CL for Mean | |
|---|---|---|---|---|---|---|---|---|
| Stratum | Variable | Level | Label | N | Mean | Std Error of Mean | | |
| NC | Outcome | 1 | Outcome | 4 | 0.051282 | 0.016217 | 0.01941546 | 0.08314865 |
| | | 2 | Outcome | 74 | 0.948718 | 0.016217 | 0.91685135 | 0.98058454 |
| NE | Outcome | 1 | Outcome | 15 | 0.096154 | 0.031582 | 0.03409482 | 0.15821288 |
| | | 2 | Outcome | 144 | 0.903846 | 0.031582 | 0.84178712 | 0.96590518 |
| NW | Outcome | 1 | Outcome | 3 | 0.038462 | 0.026274 | 0.00000000 | 0.09009133 |
| | | 2 | Outcome | 75 | 0.961538 | 0.026274 | 0.90990867 | 1.00000000 |
| SC | Outcome | 1 | Outcome | 12 | 0.080903 | 0.021628 | 0.03840191 | 0.12340320 |
| | | 2 | Outcome | 132 | 0.919097 | 0.021628 | 0.87659680 | 0.96159809 |
| SE | Outcome | 1 | Outcome | 6 | 0.028503 | 0.015437 | 0.00000000 | 0.05883701 |
| | | 2 | Outcome | 204 | 0.971497 | 0.015437 | 0.94116299 | 1.00000000 |
| SW | Outcome | 1 | Outcome | 8 | 0.054945 | 0.041562 | 0.00000000 | 0.13661569 |
| | | 2 | Outcome | 142 | 0.945055 | 0.041562 | 0.86338431 | 1.00000000 |
| AL | Outcome | 1 | Outcome | 5 | 0.052632 | 0.023031 | 0.00737424 | 0.09788892 |
| | | 2 | Outcome | 90 | 0.947368 | 0.023031 | 0.90211108 | 0.99262576 |
| DE | Outcome | 1 | Outcome | 8 | 0.112676 | 0.037793 | 0.03841208 | 0.18694003 |
| | | 2 | Outcome | 63 | 0.887324 | 0.037793 | 0.81305997 | 0.96158792 |
| ER | Outcome | 1 | Outcome | 5 | 0.072464 | 0.031439 | 0.01068465 | 0.13424289 |
| | | 2 | Outcome | 64 | 0.927536 | 0.031439 | 0.86575711 | 0.98931535 |
| PH | Outcome | 1 | Outcome | 42 | 0.229508 | 0.031171 | 0.16825656 | 0.29075983 |
| | | 2 | Outcome | 141 | 0.770492 | 0.031171 | 0.70924017 | 0.83174344 |

**Attachment 5:** Survey Report Form

## SURVEY REPORT FORM (Synar 2015)
Pennsylvania Department of Health

9234

| Area | Sample | License | Date of visit |
|---|---|---|---|
| ☐☐☐☐ | ☐☐☐ | ☐☐☐☐☐☐☐☐ | ☐☐ / ☐☐ / ☐☐ |

### Outlet Location

☐☐☐☐☐

**4. Gender of buyer**
O Male    O Female

**5. Age of buyer**
O 15    O 16    O 17

**6. Is the buyer of Hispanic, Latino, or Spanish origin?**
O Yes    O No

**1. What was the outcome?**
O Sale    O Refusal    O Non-completion

**7. Race of buyer**
O White    O Asian
O Black    O Other

**2. Type of retail outlet (select one)**

O Bar/tavern (1)            O News outlet (7)
O Beer distributor (2)      O Restaurant/deli (8)
O Convenience-gas (3)       O Supermarket (9)
O Convenience-grocery-no gas (4)   O Tobacco (10)
O Dollar Store (5)          O (EMP-LOT-PVR-UNL)
O Pharmacy/drug store (6)   O Other_____

**8. Does the outlet serve alcohol for on-site consumption?**
O Yes    O No    O Unknown

**9. Was adult supervisor in the outlet?**
O Yes    O No

**10. Was buyer asked to show ID?**
O Yes    O No

**11. Was buyer asked his/her age?**
O Yes    O No

**3. Non-completion type (select one)**

O (CBB) Cigarettes Behind Bar (1)   O (OCN) Outlet Closed/NotAccess. (8)
O (BNA) Bar Not Accessible (2)      O (ONA) Other/Not Accessible (9)
O (DNS) Does Not Sell (3)           O (PCL) Private Club (10)
O (DUP) Duplicate (4)               O (PVR) Private Residence (11)
O (EMP) Empty Building (5)          O (UNL) Unlocatable (12)
O (ITV) Itinerant Vendor (6)        O (ACC) Accessible-Other (13)
O (LOT) Empty Lot (7)               O (ODG) Outlet Dangerous (14)

**12. Were warning signs visible?**
O Yes    O No

**13. Gender of clerk**
O Male    O Female

**14. Location fields are accurate**
O Yes    O No

**15. Time of visit (military)** ☐☐☐☐

**Notes:** _____

**Questions?** Contact Steve Muccioli at the Division of Health Informatics (717-547-3634)

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# III. Survey Procedures

## Conducting a Valid Survey

Probability theory allows the use of well-defined segments (sample) of a population to estimate characteristics describing that population. Pennsylvania's Synar survey uses probability theory and a small sample of cigarette outlets to estimate the proportion of cigarette outlets which sell cigarettes to youth under the age of 18. Since a small sample is used to make inferences about the entire population, any errors or biases are magnified many times. To prevent inaccurate results and ensure the integrity and validity of the survey, surveyors must employ the following characteristics or follow the "SCRIPT".

### Secret Consistent Rigorous Impartial Patient Tenacious

**S**ecret. Keep the survey a secret. The survey is "unannounced" and cannot be mentioned to the public for the entire survey period. Participants should not initiate conversations about their participation in this survey with persons outside the survey team, except for their parents. If asked about the survey, it is acceptable to explain that a yearly survey is conducted to estimate the rate that retailers sell cigarettes to minors, but do not give specifics of the sampled outlets or the timeframe of the survey.

**C**onsistent. The same survey procedures must be followed throughout the state. Any variation in procedures will bias the survey results. Every store must be attempted in exactly the same manner. Strictly comply with the survey rules and procedures. An approximately equal number of inspections must be conducted by male and females throughout the state and a consistent distribution of male and female inspectors must be maintained from year to year to make valid year to year comparison.

**R**igorous. Rigorously complete the Survey Report Form and all accompanying forms. The Survey Report form is the primary tool for the Synar survey. Properly complete all forms. The survey results are meaningless if the data on the form is inaccurate. Consult the manual or contact DSS (see **Figure 1**). Give detailed explanations, when they are required. The more information given, the easier it is to identify and correct problems.

**I**mpartial. Remain impartial to the inspection outcome. Do not bias the outcome with your actions. A successful inspection is NOT achieved by enticing a sale or a refusal. A successful inspection is defined as one where the surveyor follows survey procedures and documents exactly what happened. Even though a high "Refusal" rate is desired, as surveyors it is your responsibility to be indifferent to the outcome of the inspection. Any actions taken to lower the violation rate are done before or after the entire survey period, not during the survey.

**Attachment 6:** Inspection Protocol

**P**_atient._ Remain patient throughout the entire survey process. Surveys rely on many different people with many different personalities. Unexpected delays should be expected.

**T**_enacious._ Don't quit until all eligible outlets on the list are inspected. If the outlet is eligible and safe, complete the inspection. The completion rate or the percent of completed eligible outlets is very important to survey validity. A low completion rate negatively affects the validity of the survey.

# Procedures for Attempting to Purchase Tobacco

**Checklist before Departure**

- ❏ A list of outlets, directions and maps
- ❏ A Letter of Verification
- ❏ Cash for purchases
- ❏ Forms for recording the results of each compliance check
- ❏ Black ink pens (_no markers or pencils_)
- ❏ A plastic bag to hold the cigarettes purchased
- ❏ Parental permission slips for the youth participants

**Prior to Inspection (before entering the outlet)**
_Adult supervisor:_
- ▪ Ensure the vehicle is parked out of site of outlet personnel.
- ▪ Evaluate the outlet for safety from the outside.
- ▪ Evaluate the outlet for eligibility. Although the outlet may be included on the sample list, locations inaccessible to the public (e.g., private clubs, prisons, and private homes) are not part of the survey, but must be accounted for on the Report Form and accounting forms. If there is a sign on the entrance stating that no one under the age of 21 or 18 is permitted, do not allow the minor to enter that outlet.

_Youth Participant:_
- ▪ Decide which brand of cigarettes will be attempted before entering the outlet.
- ▪ Decide on a similar back-up brand in the event that the first choice is not in stock.
- ▪ Carry more than enough money to cover the cost of the cigarettes.

**During Inspection**
_Adult supervisor:_
- ▪ Enter the outlet before the youth.
- ▪ Evaluate the outlet for safety from the inside. If it is deemed unsafe, leave immediately and stop the youth from entering.
- ▪ Locate where cigarettes are located and look for warning signs.
- ▪ Observe the gender of the clerk.
- ▪ Determine whether the outlet sells alcohol for on-site consumption.

**Attachment 6:** Inspection Protocol

- If the outlet sells alcohol, determine whether the cigarettes are sold from behind the bar.
- If the outlet is a non-completion, gather enough information to satisfy the collection forms.
- If budgeted, the adult can purchase a small item to appear inconspicuous.
- In some cases, the outlet may be too small for the adult to enter without tipping off the clerk. If the supervisor does not enter the outlet, an explanation is given on the Survey Report Form and Compliance Sheet.

*Youth Participant:*
- Enter the outlet after the adult supervisor had enough time to establish that the inside of the outlet is safe.
- Attempt to purchase cigarettes.

Both the adult supervisor and the youth participant should appear as inconspicuous as possible in the outlet and not wear or carry anything that will make them stand out. Do not take the data collection forms or note pads into the outlet.

**Post Inspection (After leaving the outlet)**

*Adult supervisor:*
- Immediately after exiting the outlet, complete the Survey Report Form with the youth. Instructions for completing the form are located in Appendix 1 of this manual.
- After each sale, attach a label to the cigarettes purchased, with the name and address of the outlet and the date on it. Place the purchase in a plastic bag.
- Discuss the experience with the youth.

*Youth Participant:*
- Assist the adult with the Survey Report Form.
- Discuss your experience with the adult and voice any concerns.

# General Survey Procedures

- Synar survey uses "**Address Based Sampling**." When an address is visited and the business name is different than what is listed on the sample list, inspect the outlet at the address, regardless of the name.

- If the youth participant enters a sampled outlet that is accessible to minors and finds that it only sells cigarettes through a **vending machine**, the youth participant **must** attempt to buy cigarettes from the vending machine.

- Make only **one attempt** to purchase per outlet.

- Adult supervisors will not wear **uniforms** or visible forms of **identification**.

**Attachment 6:** Inspection Protocol

- Youth participants will not wear clothing that could be perceived as "gang related".

- Youth participants will *not* take their **IDs** into the outlets.

- Serving **alcohol** is NOT a valid non-completion reason. An outlet is NOT inaccessible just because it serves alcohol.

- Youth participants will *not* attempt to purchase cigarettes if someone in the outlet **knows them**. The outlet must be revisited at another time.

- **Survey procedures** must be the same for every outlet. A **script** should be followed when attempting to purchase cigarettes to avoid biasing survey results.

- Youth participants will **answer all questions honestly**. If the clerk asks for whom the cigarettes are being purchased, the youth is to respond "me".

- The youth participant will give his/her **age** accurately, if asked by the clerk. It is against the law to knowingly and falsely represent oneself to be 18 years of age or older to purchase cigarettes.

- **Do not argue with the clerk.** If the clerk refuses to sell to the youth participant, leave the outlet quietly and do not argue or try to persuade the clerk to sell.

- **Complete the entire sample list**. It is very important to attempt every outlet on the sample list. The completion rate is an important aspect of any survey.

- **NEVER use youth under the age of 15**.

- The definition of a "**Sale**" is when money changes hands and the youth leaves the counter with cigarettes OR the youth obtains cigarettes from a vending machine, the transaction is considered a "sale", even if the employee follows the youth outside and demands that they return the cigarettes.

- A **refusal** is when the youth asks for cigarettes and is refused by the clerk.

- A **non-completion** is when the youth does not have the chance to attempt to buy cigarettes because of one of the non-completion reasons described in Appendix 2.